I^2 Deep Dive Assessment

The honey Value Chain

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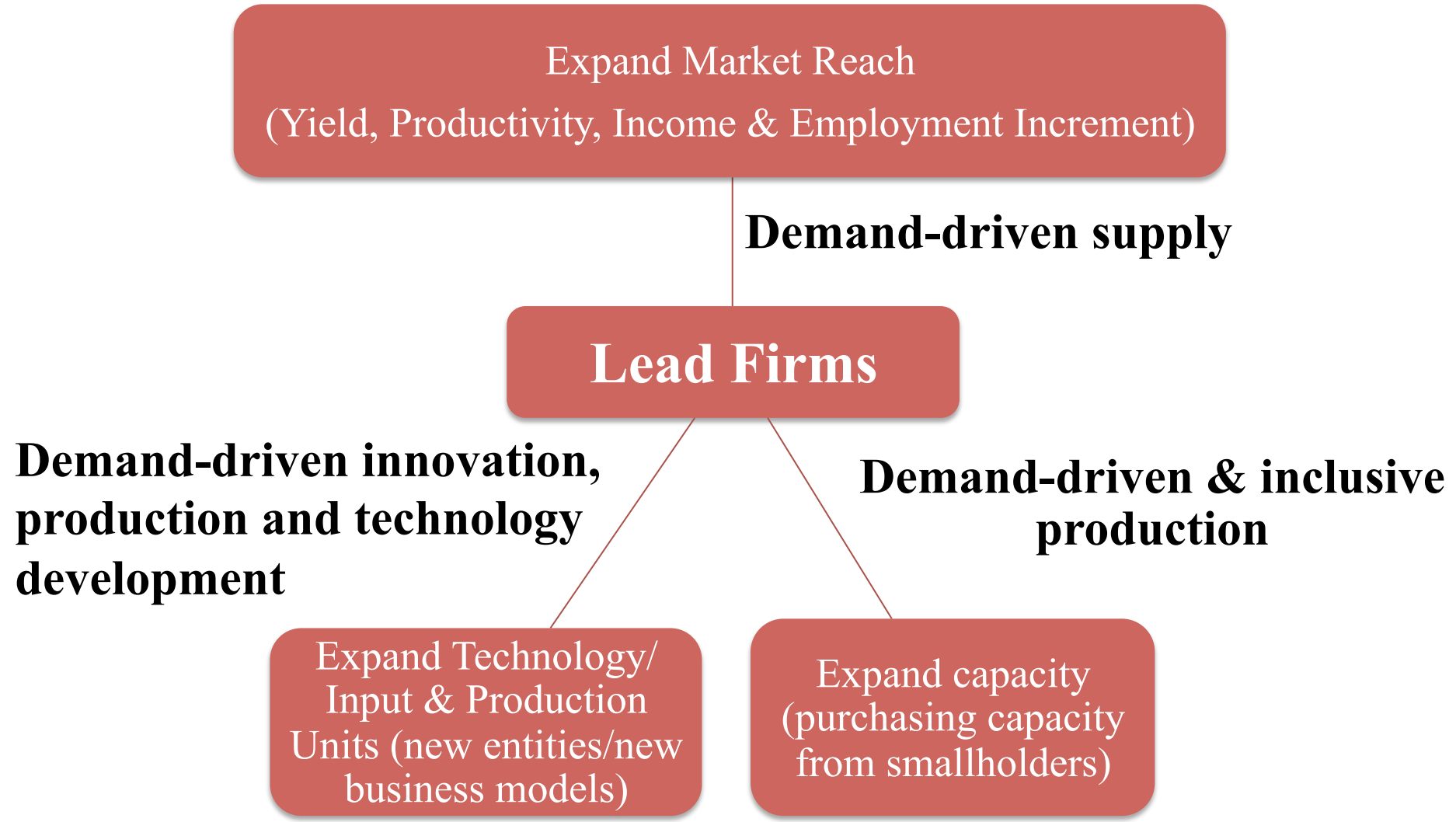
PART I: Executive Summary

THE I^2 APPROACH



Ethiopia has a strong and ancient know how for beekeeping and is a key player in Africa

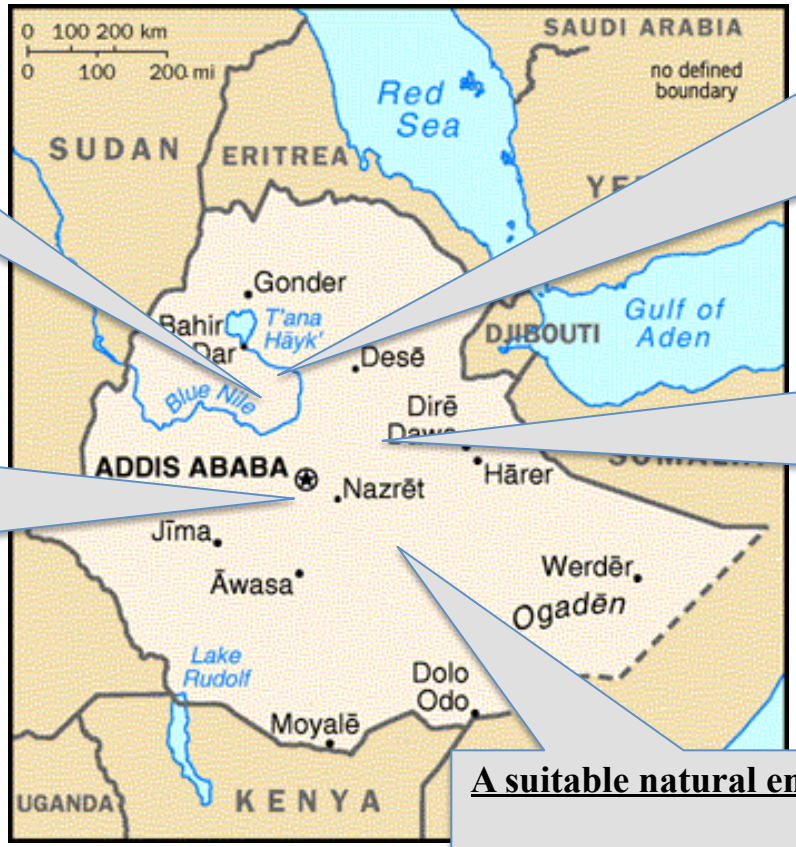
History:

A long tradition of beekeeping (since approximately 3500–3000 BC)

Annual Production:

40,000 tons of honey and 4,000 tons of beeswax annually.

Largest production in Africa (almost 25% of African total honey production)



Supply potential:

The current output level is only around 8% of the country's overall production potential

Huge bee colonies:

Five distinct wild bee species of 8 to 10 million colonies 4.8 million of which are hived

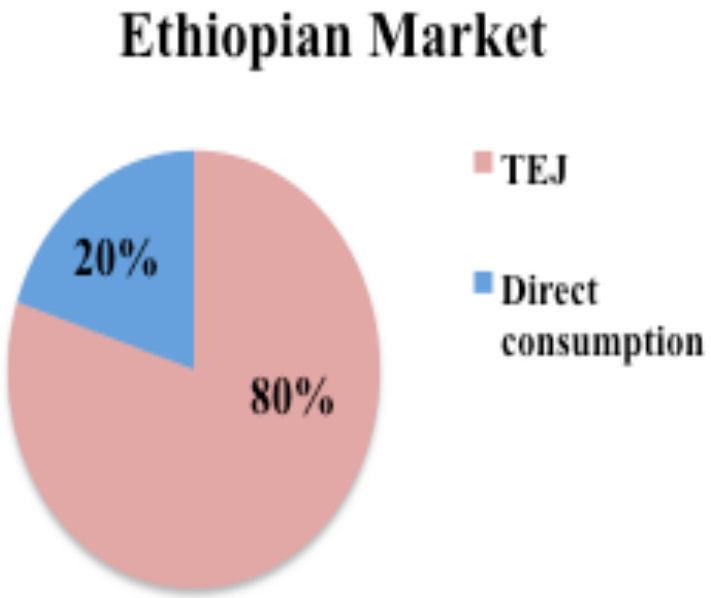
A suitable natural environment:

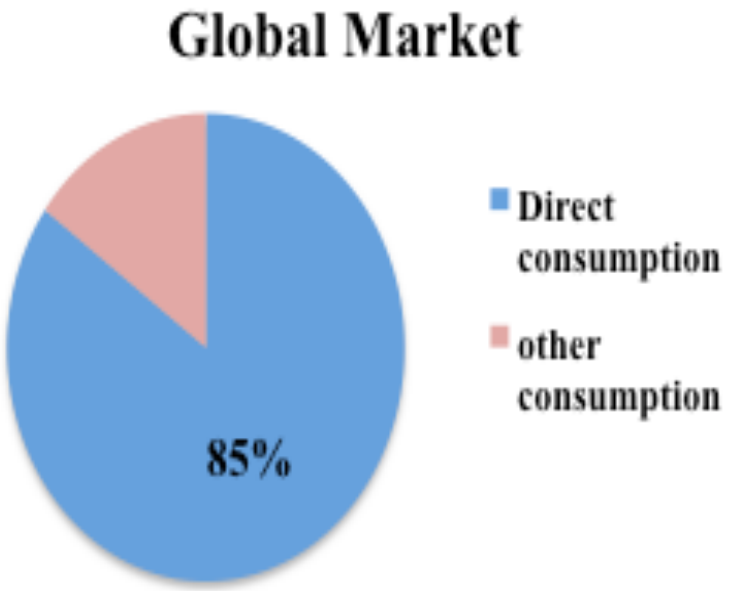
Good ecology and climatic condition for beekeeping

Honey – major product in the Ethiopian apiculture industry!

Honey Consumption - huge local market, primarily for indirect consumption in the form of tej (local honey wine)!

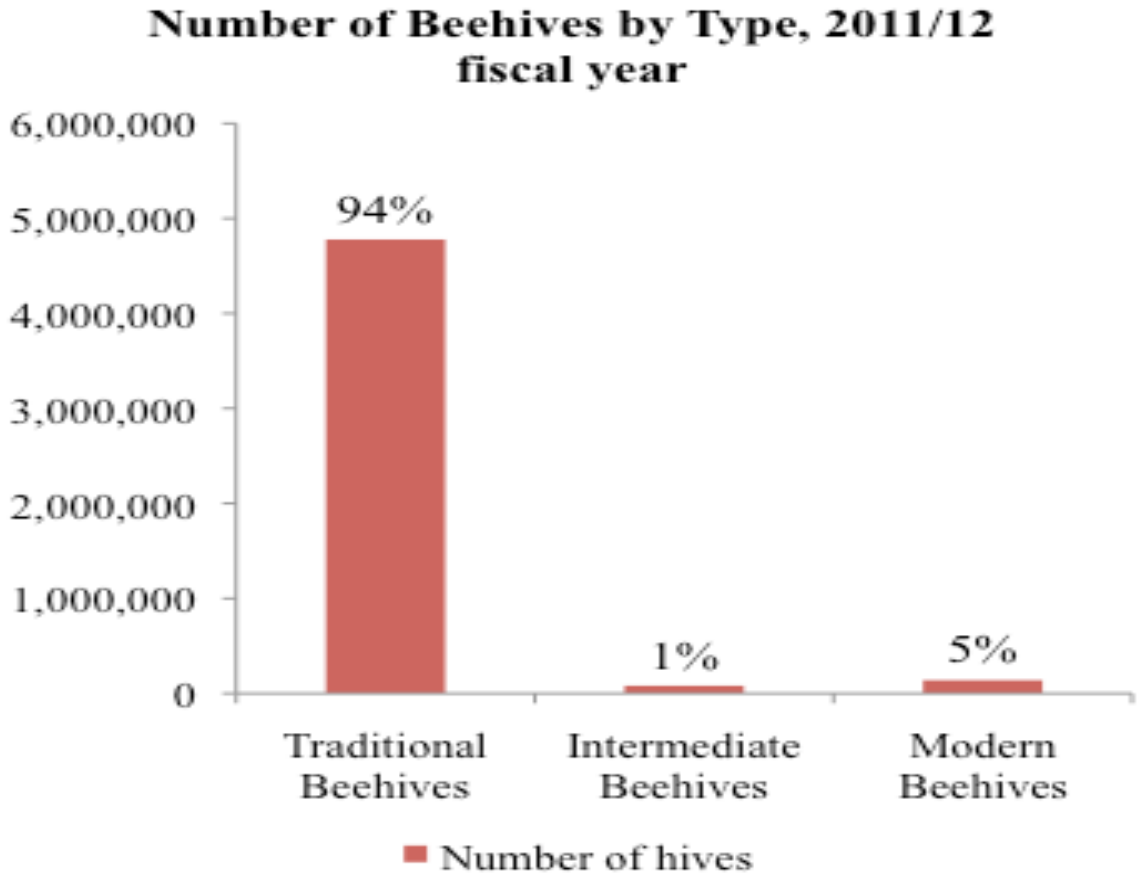
- **Around 80% of the production is used to brew Tej**, which is less concerned with quality (no need to separate the honey from the beeswax for tej)!





Honey Production - predominantly traditional!

- **94% of production undertaken using the traditional system.** Low yield and low quality from the traditional production system!

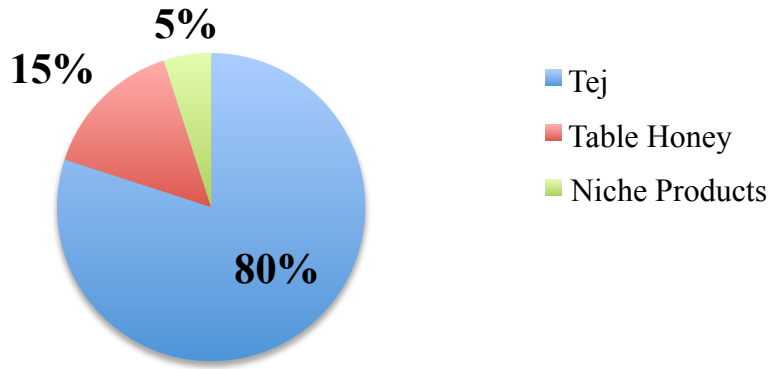


Exports of honey and bee products have been negligible

Domestic: 98% Production (40,000 T)

- Tej 80%
- Table honey 15%
- Niche products 5%

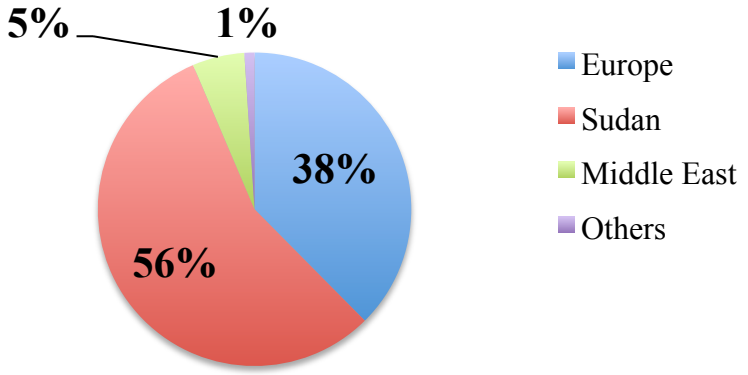
Shares of Honey consumption in Ethiopia in 2012



Exports: 2% Production (763T)

- Europe — Norway: 30.5% (220T); UK: 5% (41T); Germany: 2.5% (20T)
- Sudan — 45 T
- Middle East — 17 T
- Others — 8 T

Shares of Ethiopian Honey exports in 2012



Ethiopian honey/beeswax processors & exporters are struggling with similar challenges …

Interviews with:

Owner, Beza Mar

Owner, APINEC

Management Staff, Dimma Mar

Tadele Mar

"I plan to establish a commercial farm and use it as a demonstration beekeeping site for the out-growers to produce and supply good quality honey!"

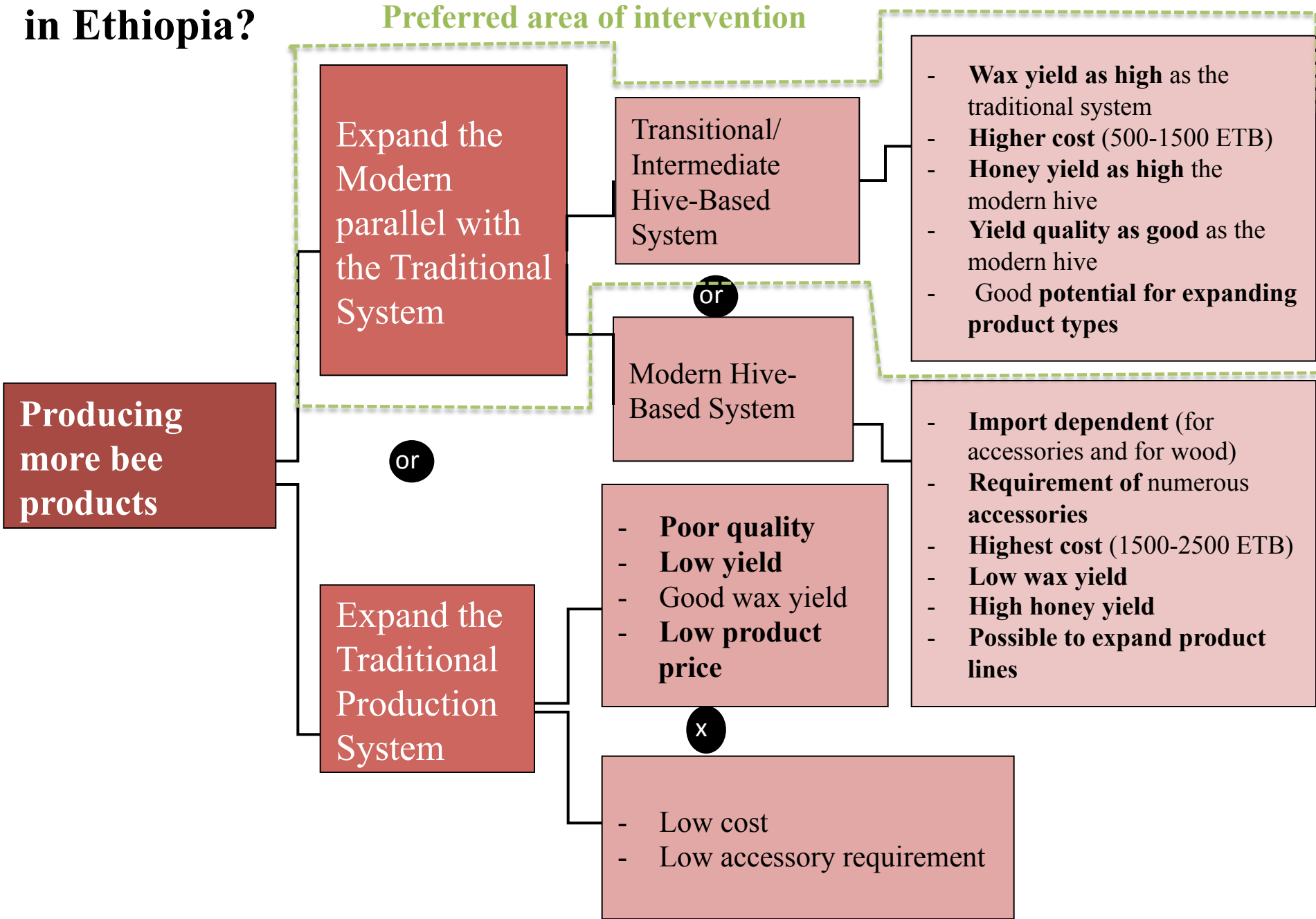
"I'm looking for a collection center, a cooperative, a union or any organized entity that can supply honey/ beeswax in bulk! I'll be happy to provide inputs and trainings for producers that come organized & supply in bulk"

"Producers are engaging in side selling and are adulterating their yield when supplying the contracted amount to processors!"

"We are using used packaging materials and these are also in short supply and are found through informal ties with suppliers!"

"Producers misuse hives and accessories, these inputs have high costs and there are also quality problems!"

So, how exactly do we produce more & better honey and beeswax in Ethiopia?



Yet there is no inherent reason for the processors' inability to obtain higher bee product yields and to benefit from selling to international markets …

- Estimated honey production potential = 500,000 ton/year
- Estimated wax production potential = 40,000 ton/year

- Established current demand for Ethiopian exports;

➢ EU – 280 tons (Norway 220t, UK 42t, Germany 20t)
➢ China – 500 tons (expressed interest for a processing company)
➢ APITRADE Africa – expressed interest to source propolis

What are the problems in the value chain?

Beehives, Accessories, Packaging, Labeling Producers

- ✓ Import dependent
- ✓ Small scale (losing out on economies of scale)
- ✓ Absence of standard/certification
- ✓ Small scale, low skill & high cost in labeling
- ✓ No local producer of packaging

Beehives, Accessories, Packaging, Labeling Importers

- ✓ Large scale bulk imports
- ✓ Quality challenges
- ✓ Costly but good quality for labeling abroad
- ✓ Costly imports of packaging materials and storage containers

Honey Bee Colony Availability

- ✓ Low skill in queen rearing
- ✓ Labor & knowledge –intensive task
- ✓ Aggressiveness of Ethiopian bees

Producers and their supplies

- ✓ Fragmented small scale production
- ✓ Traditional, low & poor quality yield
- ✓ Side selling & adulteration instead of raising yield
- ✓ Limited production & post-harvest handling skill/management

No wonder Ethiopian processors lose money?

Challenges along the Value Chain:

Input suppliers

"Raw materials are costly & there are no standards"

Tej houses

"Can we buy crude honey?"

Individual Producer

"I have 300kg no one is buying"
"Using the modern system has high cost"

Cooperative

"We have 20 quintal no one is buying, our product is failing laboratory tests"

Processor

"I need a supplier of at least 500 quintal good quality yield"

Export Market

"Can you supply at least 500 quintals of quality yield?"

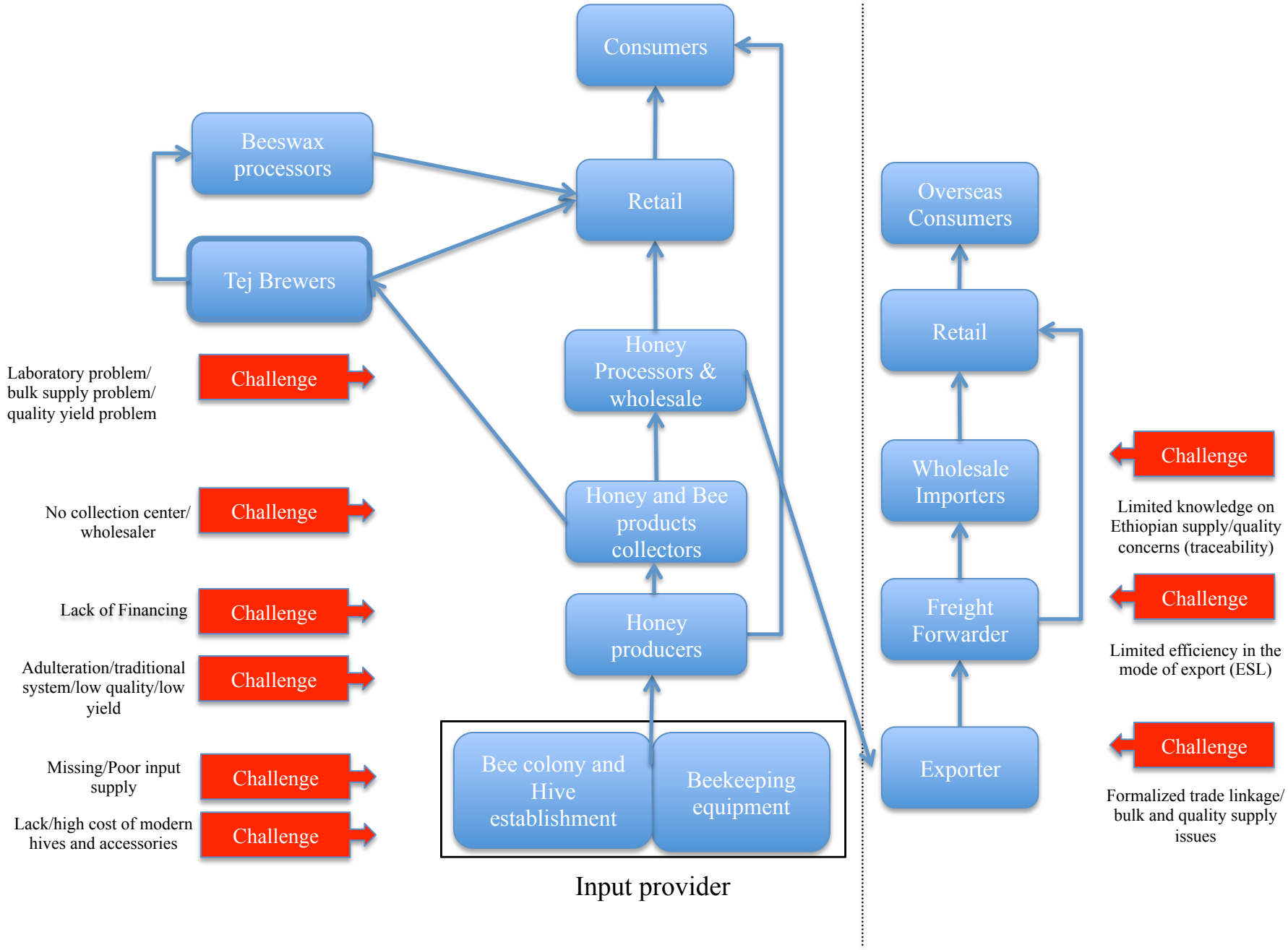
The problems reveal three areas to improve the industry…

1) Improved (Modern) system-based quality production
2) Bulk supplies (bulk production and/or bulk marketing)
3) Standard (certified) production input and yield
4) Well commercialized and value added tej production and marketing

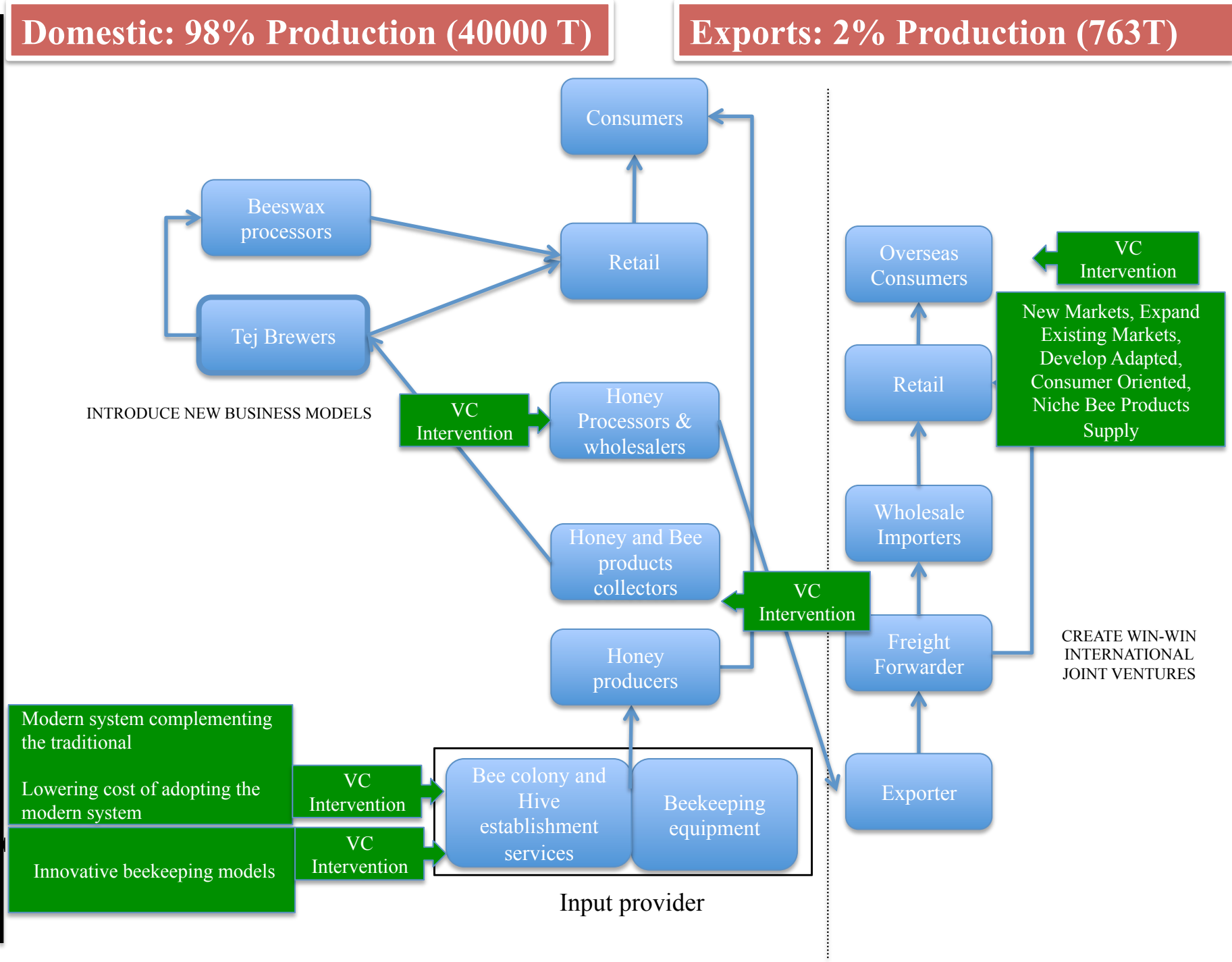
Value Chain Challenges

Domestic: 98% Production (40000 T)

Exports: 2% Production (763T)



Proposed Value Chain Interventions



I² Interventions for strengthening the Ethiopian beekeeping industry

1. **Facilitate increased complementarity between the modern and traditional system-***(through cost reduction, quality controls, realization of scale economies and innovative business models)*

2. **Introducing new business models (***Enabling bulk supply &raising quality yield)*

3. **Access/Expand markets, (***Creating win-win international joint ventures that help local producers to comply with international standard concerning quality, labeling, shipping and trade tariffs.)*

4. **Facilitate entry into new product lines and value addition** *(develop adapted, consumer oriented, niche bee products supply)*

5. **Enforce** the existing **regulations on apiculture & Advocate** for needed changes in **policy environment** *(enable competitiveness along the value chain, advocate for 'market development' interventions by the government)*

Areas Of Action

Intervention 1 – Reducing the cost of adopting the modern system!

HOW?

WHERE to reduce cost?

Casting mould/ wax printer

Beehives

Wax melter

Storage containers

Honey Bee Colonies

Reducing the cost of using the modern system is one powerful intervention…. where significant costs can be reduced in the value chain

HOW to reduce cost?

(Identify actors and design business models for identified areas of cost reduction)

1) Tailored local production

(Input production from locally available materials- e.g. transitional beehives and accessories)

2) Quality control of local production

(Certification of accessories - efforts on the way)

3) Appropriate scale of local production operations

(Create lead businesses in the areas of cost reduction, realize economies of scale while also integrating SMEs with lead business)

Grounding intervention 1

Identify a potential lead firm

Identify a driven entrepreneur working in the identified areas of cost reduction.

Share vision and goals.

Sign expression of interest and secure commitment.

"First baby steps"

Develop business model, identify and meet with partners/important stakeholders.

Identify needs of the designed business model- develop concept note.

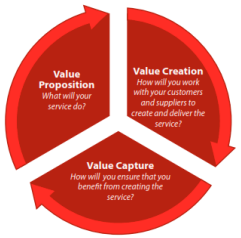
Search for sources that could address needs of the business model.

Execution

Develop detailed business plan.

Secure funding and other needs of the project.

Incubate the project through intensive business support and implementation services.



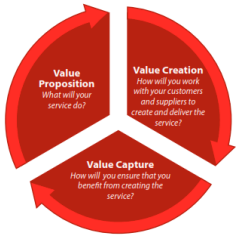
Intervention 2: Introducing new business models that can be up-scaled (Enabling bulk supply & raising yield)!

1. Encouraging and promoting the use of commercial farms for beekeeping (Engaging smallholders and landless youth in the surrounding areas)- Pilot: Tensay Zeru Crop Development Enterprise/Debrezeit Betezemed SC. farm

2. Enabling coffee farms to engage in beekeeping, promoting the production of coffee honey, assisting in certification of Ethiopian coffee honey (Involving smallholders and landless youth in the area)- Pilot: Bebeka Coffee Estate SC

3. Enabling beekeeping in forests and environmentally protected areas (Involving smallholders and landless youth in the surrounding area)- Pilot: Ethiopian Gum Processing Enterprise Forest/EPA five weredas landless youth groups

4. Urban (peripheral) beekeeping practice (Involving mainly unemployed youth in the surrounding area)- Pilot: Meaza Mar in Addis Ababa/beekeeping in Dessie



Grounding intervention 2

Identify businesses

-Tensay Zerfu crop development
-Bebeka coffee estate
-Ethiopian gum enterprise
-Meaza Mar
-Debrezeit Betezemed SC. Farm
-EPA five weredas landless youth groups
-Beekeeping in Dessie

Share vision and goals.

Sign expression of interest and secure commitment.

"First baby steps"

Develop business model, identify and meet with partners/important stakeholders for the project.

Identify needs of the designed business model-develop concept note.

Search for sources that could address needs of the business model.

Execution

Develop detailed business plan.

Secure funding and other needs of the project.

Incubate the project through intensive business support and implementation services.

Intervention 3: Facilitating access to markets and expansion of markets

(Identify actors and design business models)

- Beehive producer/supplier
- Honeybee colony suppliers
- Accessory suppliers
- Processing equipment suppliers
- Packaging material suppliers

Linking technology suppliers to production agents

Linking producers with end buyers/export markets

- Beekeepers/ Producers
- (lead processing companies, new business actors formed through new business models)

- Link producers with processors & other marketing agents
- Identify and link export market agents with processors/ producers

Export market buyers/end market outlets

Intervention 3: Through strong market integration and a good export development group, existing markets can be expanded and new markets can be more easily penetrated …(quality & bulk supply)

New markets

- Buyer agents
- ETG/ProFound
- ACDI/VOCA, I2

Processors

Unions
Cooperatives
Collection centers
Large scale producers

Smallholder producers

Ingredient suppliers
(Beehives and accessories, bee colonies, bee forage, harvesting and storage equipment, processing equipment, packaging, labeling, warehousing, transport and logistics)

- 2008, third country listing for exporting to EU secured
- 122% increment in yield registered since
- Conformity of production to consumer requests began
- Increased integration along the chain
- Increased commercialization trickled down to smallholders

Intervention 3: In the Ethiopian api-industry, there are few integrated players

Beehives & Accessories + Bee colony + Bee forage + Harvesting & storage + Processing + Package, label, warehouse & transport

North	Small scale players - Ingredient suppliers - Producers	Cooperatives	Spot /special trade	Dimma (warehouse) Comel (warehouse)	Small scale (label & packaging) Mid-large scale (transport& logistics)
North West	Small scale players - Ingredient suppliers - Producers	Zembaba Union Cooperatives	Spot /special trade	Tutu & her family (warehouse) Beza Mar (warehouse) Apinec(warehouse)	Small scale (label & packaging) Mid-large scale (transport& logistics)
South West	Small scale players - Ingredient suppliers - Producers	Spot /special trade		Yeshi Mar (site & warehouse) Rahi honey (site & warehouse)	Small scale (label & packaging) Mid-large scale (transport& logistics)
South	Small scale players - Ingredient suppliers - Producers	Keffa/Bench Maji / Shebedino Unions Cooperatives	Spot /special trade	Apinec (site & warehouse) Beza Mar (site & warehouse)	Small scale (label & packaging) Mid-large scale (transport& logistics)

Grounding intervention 3

Select/ identify businesses

-Maereg and a partner

-In South West where industry integration is poor.

-enable market access for producers/coops (organized beekeepers' group of landless youth).

-Yeshi Mar having out growers in Oromiya, Debrezeit

-Processors (Beza Mar) partnering with other Southern country agents

"First baby steps"

Identify export markets and partners/important stakeholders to secure access.

Develop concept note & identify needs of the designed business model.

Search for sources that could address needs of the project.

Execution

Develop detailed strategy plan.

Secure partners/ buyer agents.

Incubate the project through linkage/contract with buyers and business support services.

Intervention 4: New product lines, value addition & innovation

(Identify actors and design business models)

New product lines:

- Flavored honey (coffee, ginger, spice …)
- Propolis, Pollen

Value additions:

- Cosmetics/Essential oil
- Pollen-honey combination

Innovations:

- Pharmaceutical outputs (propolis pharmacy)
- Dried tej

Intervention 4: Niche bee products production opportunity for Ethiopia

- Niche Bee products such as Propolis, Bee venom, Royal Jelly could be harvested in Ethiopia
- However, they can only be produced using the modern system
- Different products require different production methods
  - For instance, bee venom collection is particularly compatible with urban beekeeping, because it requires:
    - Specific services such as costly electric tools, cool temperature, storage facilities
    - Little hives supervising for the farmer

Grounding intervention 4

Identify entrepreneurs

Identify driven entrepreneurs working in value addition, entering new product lines & engaging in innovations.

Share vision and goals.

Sign expression of interest and secure commitment.

"First baby steps"

Develop business model, identify and meet with partners/important stakeholders.

Identify needs of the designed business model- develop concept note.

Search for sources that could address needs of the business model.

Execution

Develop detailed business plan.

Secure funding and other needs of the project.

Incubate the project through intensive business support and implementation services.

Intervention 5: Advocate for needed changes in policy environment

Work through partners:

- Apiculture Board, Beekeepers Association, MSPs
- Partner projects: ASPIRE; ACDI/VOCA
- Taking part in assignments from MSPs

Our goals for the future

Our goals for the future: Baseline; Year 2012/13

- Sudan - dominant
- EU - limited
- USA - trial
- Japan – expressed interest

- Average number = 150,000 nation wide
- Purchase crude honey
- Domestic and limited export
- Largely small-scale/informal businesses
- Not commercialized

Tej houses

End market (export)

Processors

Producers

- Average highest capacity = 2,400 tn/yr
- Limited sales = average highest $750,000/yr
- Lack bulk & quality yield

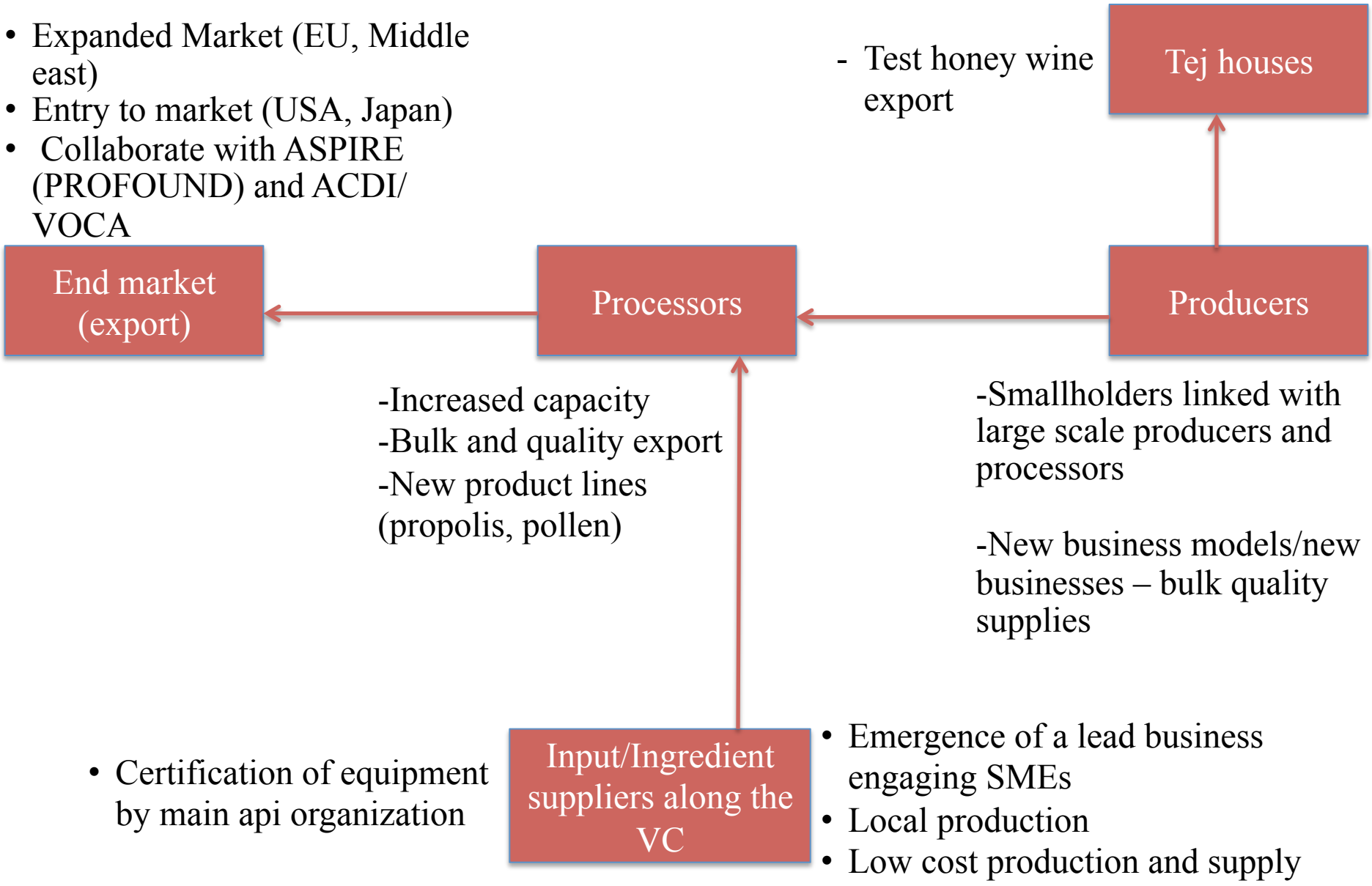
- Average = 1.5 mil beekeepers (est.)
- 94% traditional production
- Disorganized/scattered
- Side selling to local regional market
- Poor quality & few bulk supply

Input/Ingredient suppliers along the VC

- Importers – major 2
- Technology centers – 9 gov
- Disorganized SMEs
- Limited standardization

- Packaging
- Storage
- Beehives and accessories
- Processing equipment

Our goals for the future: target 2015



PART II: Deep Dive Analysis of The Ethiopian beekeeping and bee products value chain

Ethiopia Sustainable Agribusiness Incubator; Innovation and Incubation

USAID in Collaboration with Precise Consult International (PCI) and Economic Transformation Group (ETG)

1-How are bee products actually produced?

The industry is actually two different markets in Ethiopia:

Honey

Beeswax

The honey market takes the lead in terms of growth and production volume.

Both honey and beeswax need six ingredients!

- Beehives and accessories
- Bee inception (bee trapping)
- Forage/Feed
- Harvest and storage
- Honey/Beeswax Primary Processing
- Packaging/Labeling
- Warehousing and Transporting

After the establishment year (setting beehives & colony), the process from honey production up to packaging takes on average 150-180 days (22-26 weeks) – (est.)

Stage 1: **Beehives and Accessories**

Casting mould / wax printer has the highest cost at the beehives and accessories stage of the honey and beeswax value chain ….

But one casting mould can serve 100 beehives and this brings the cost down to 43 – 60 ETB/hive.

The equipment is (can be) produced locally but due to quality problems, it is imported in many cases!

Stage 1: **Beehives and Accessories**

Beehives may be produced at small scale but are one of the high cost ingredients in the initial beehives and accessories stage …

Traditional Beehives

- **Building materials;** Clay, straw, bamboo, false banana leaves, logs, barks of tree and animal dung
- **Cost;** Not greater than 100 ETB

Transitional Beehives

- **Building materials;** timber , robe, bamboo and clay
- **Cost;** 1000 – 2000 ETB for timber, 300-500 ETB for clay

Modern Beehives

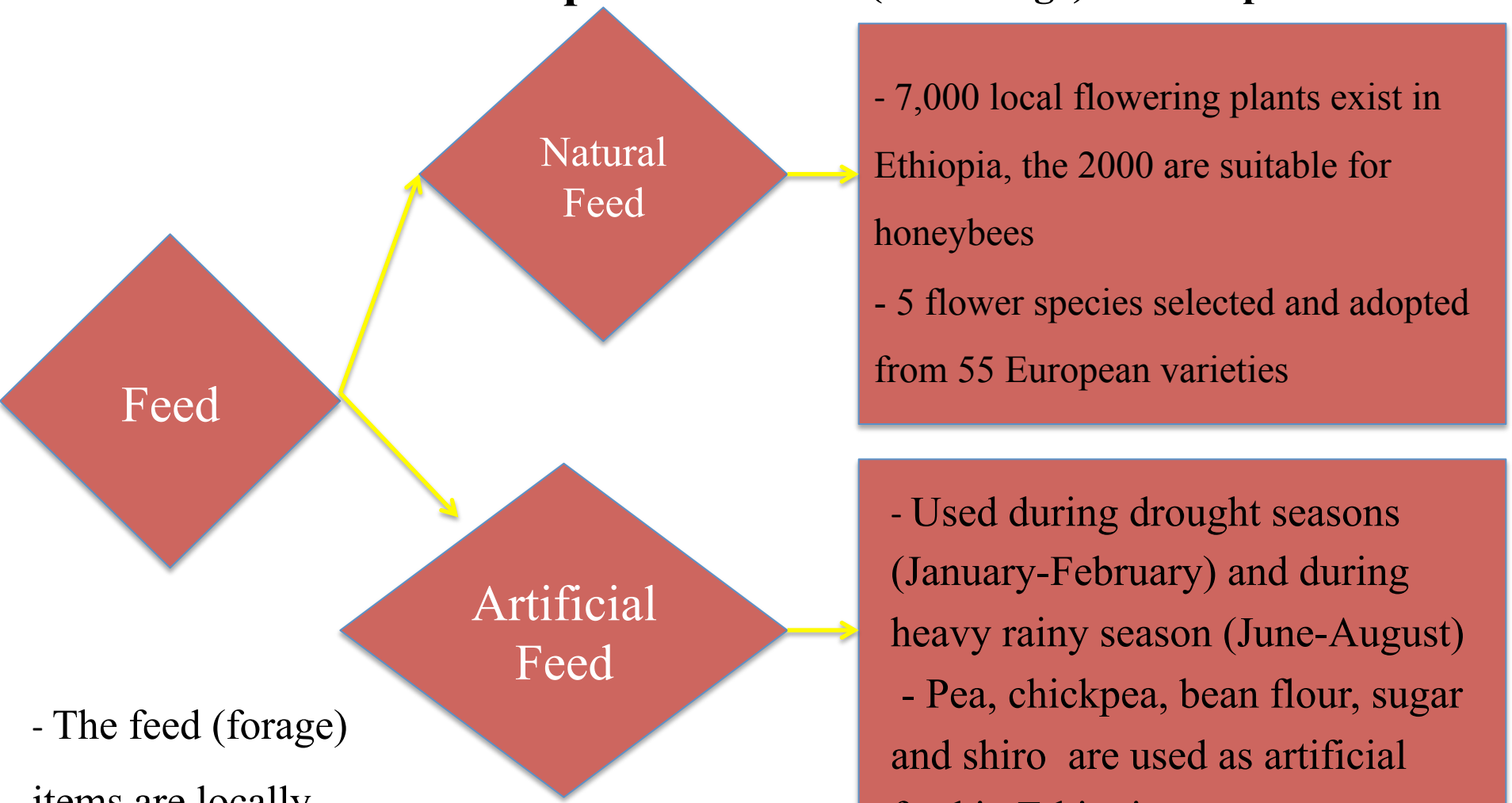
- **Building materials:** timber (Austrian pine wood mainly)
- Cost: 1500-2500 ETB

Stage 2: **Bee inception/ bee trapping**

- Dominated with traditional way of trapping!
- Placing traditional beehives on trees!
- Modern system of colony splitting (queen rearing) is limited!
- Colony shortage in some regions, surplus in others, relatively developed colony market (in Tigray)!

Stage 3: **Feed/Forage**

There are two main components of feed (Bee forage) in Ethiopia

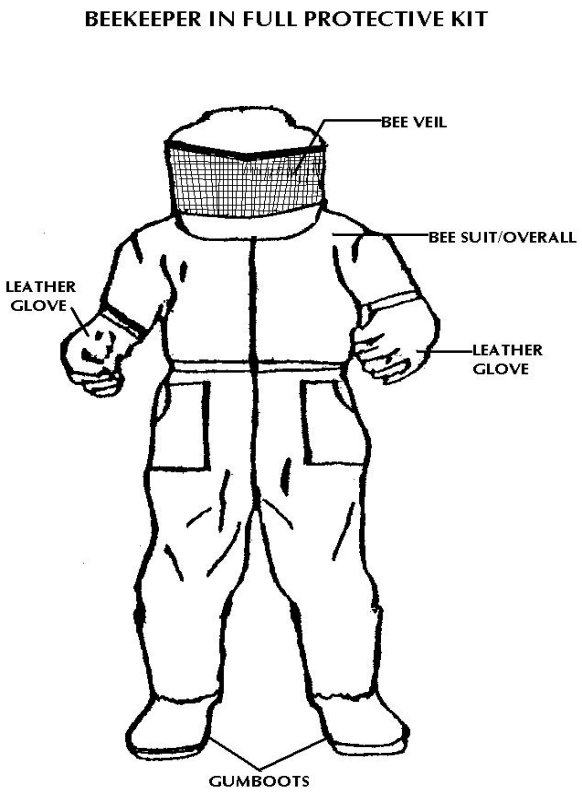


- The feed (forage) items are locally available!

Stage 4: **Harvesting**

Protective apparel and storage (stainless) containers are the high cost components at the harvesting stage of the value chain ….

- One container also serves for yield from numerous hives depending on yield volume and container size.



- Full protective kit = 623 ETB

- 50 lit. 3,200 ETB

Stage 5: **Primary Processing**

Honey presser and wax melter are the high cost items at the processing point of the honey and beeswax production value chain …

Honey presser = 6, 500 ETB
Honey extractor = 4, 900 ETB
Wax melter = 8,000 ETB

One extractor can serve 60 hives & cost per hive is around 82 ETB. The same applies to the presser and melter!

Locally producible items but predominantly imported!

Stage 6: **Packaging and Labeling**

- Used bottles/plastics/stainless steel containers are purchased from the largest open market, MERKATO (*minalesh tera*).

- The used packaging materials are cleaned and are re-used for packaging of honey.
- 2.50 ETB per 800gm bottle
- 450 ETB per steel drum
- 18 ETB per 370g jar (import)

- Labeling is one of the low cost value addition points – printing businesses produce the labeling for honey/ beeswax processors.
- Although low cost, quality of the labels is relatively poor!
- Labeling done abroad for few bottled/jar exports.

Stage 7: **Warehousing and Transporting**

- Warehousing is mainly storage of purchased honey and beeswax at the processing plants.

- Purchase is made once/twice at the harvest season/s while processing and marketing takes place smoothly all through the year!

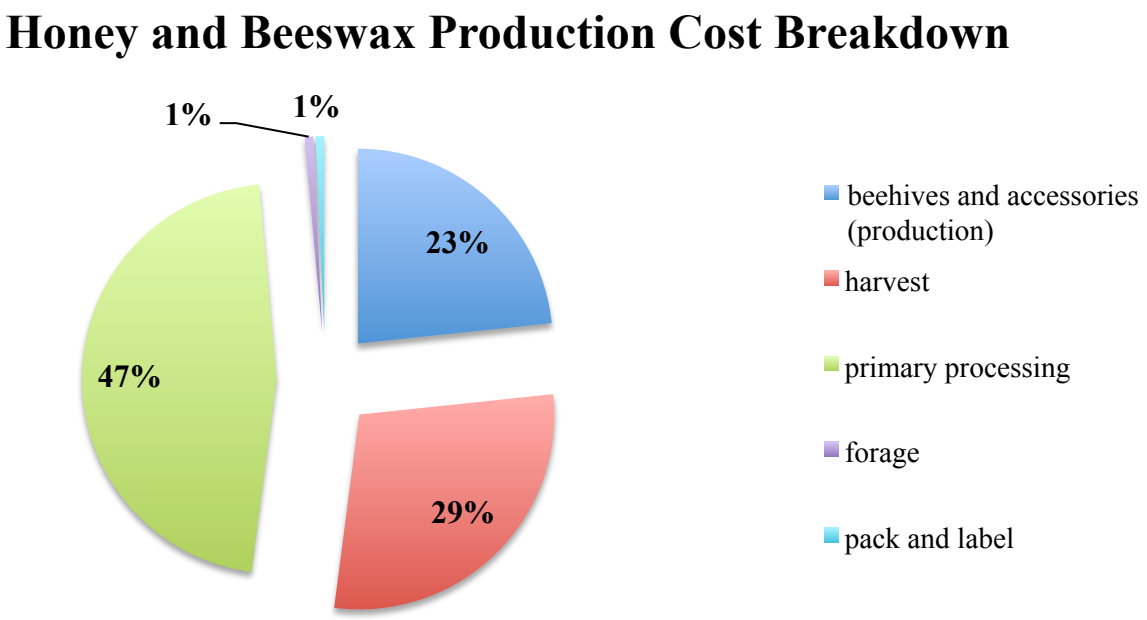
- The main mode of transport is road –

  - processors first transport the honey from the production site to the processing plant

  - then processed honey/beeswax is transported from processing plant to the loading point for exports and to end market outlets for the domestic market.

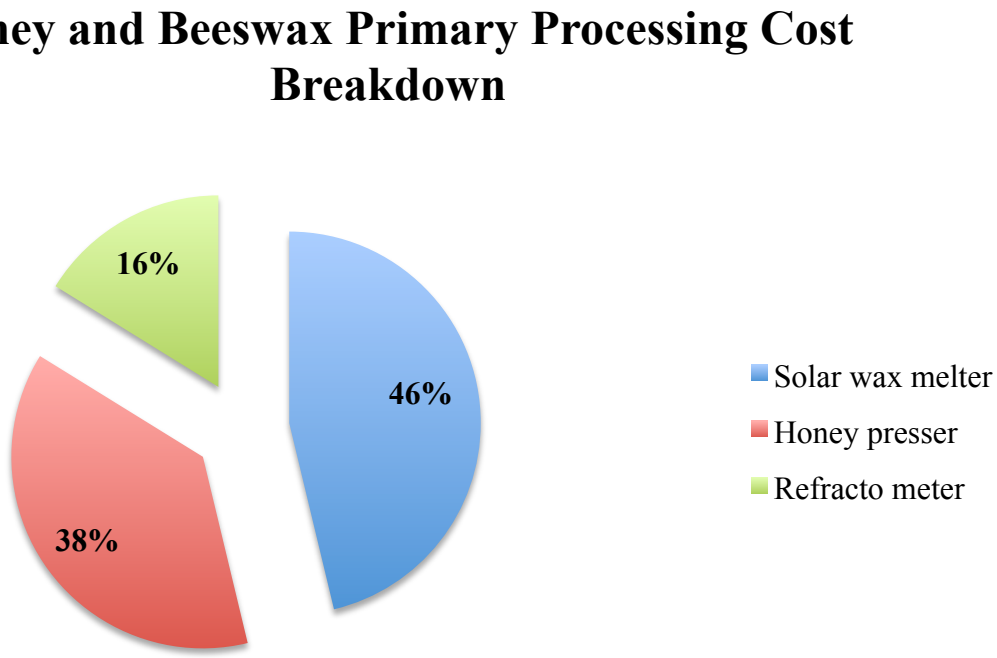
2- Where can we reduce input costs?

In the modern system of production of honey and beeswax, as expected, **the highest cost is at the primary processing stage**…



The highest cost in honey and beeswax production, using modern systems, is primary processing!

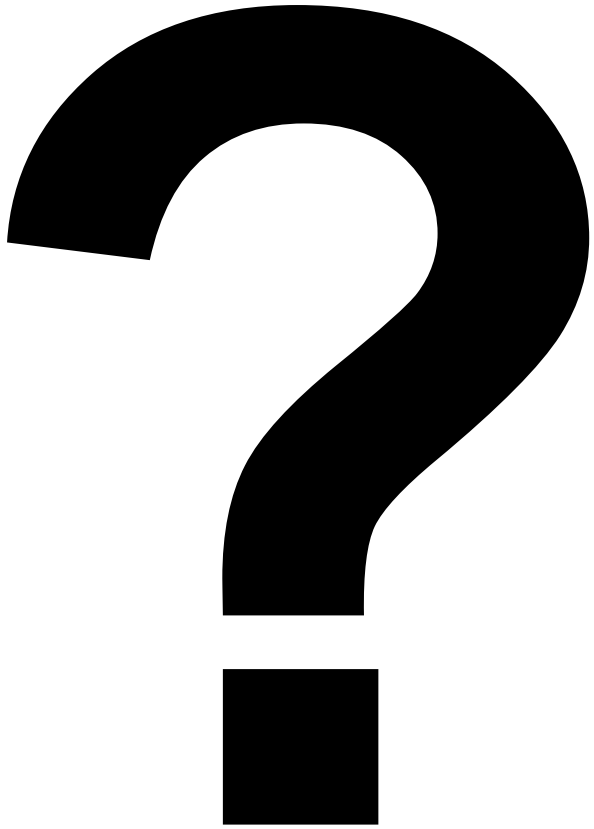
At the primary processing stage, in the modern system of production, **the highest cost is wax melting!**



Wax melter has the highest cost followed by the honey presser at the primary processing stage. (High costs due to imports!)


3- There is not as much local production as there can and should be!

How many bee colonies in Ethiopia?



8 – 10 MILLION! – LARGEST IN AFRICA!

How much/How many bee products in Ethiopia?

- **40,000 ton of honey**
- **4,000 ton of beeswax**

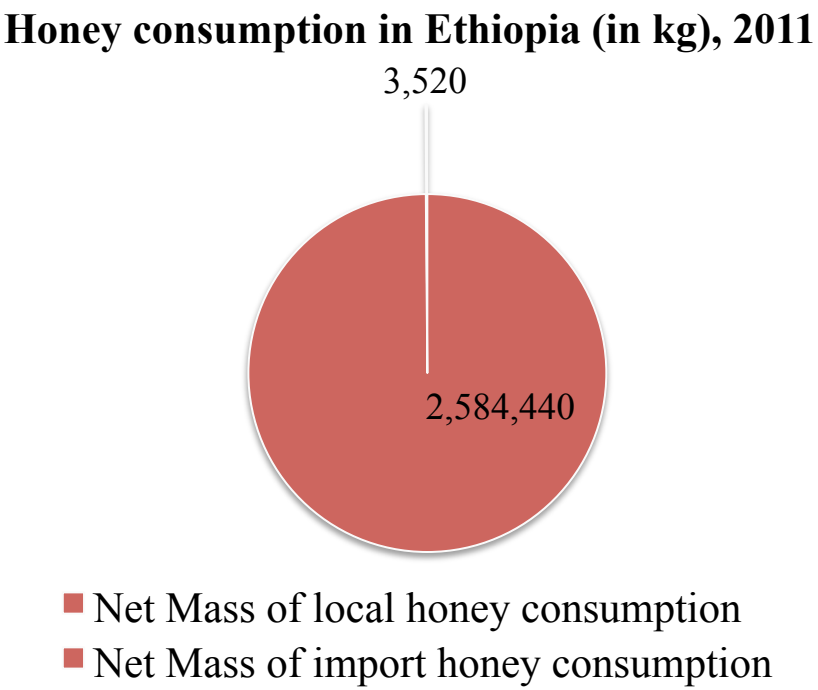
ONLY 8% OF PRODUCTION POTENTIAL!

ONLY 20% OF POTENTIAL BEE PRODUCTS!

(2 products out of possible 8)

Production V. Consumption

99.05% Of Natural Honey Consumption In Ethiopia Is Sourced Locally

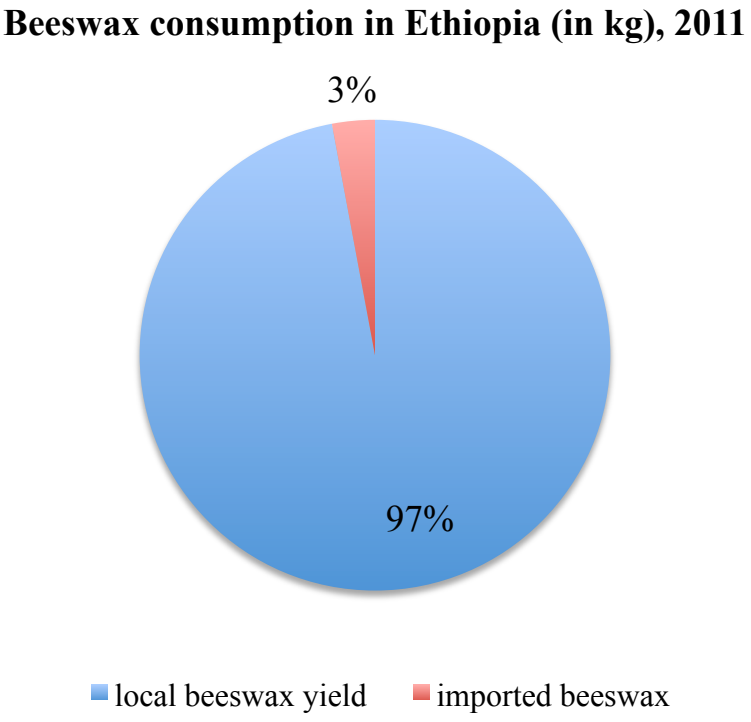


For every Kg of natural honey consumed in Ethiopia, 0.00136 kg is imported – insignificant imports!

Production V. Consumption

97% Of Bees Wax Consumption In Ethiopia Is Sourced from local yield

For every Kg of bees wax consumed in Ethiopia, 0.0059kg is imported-insignificant but relatively higher than natural honey imports!

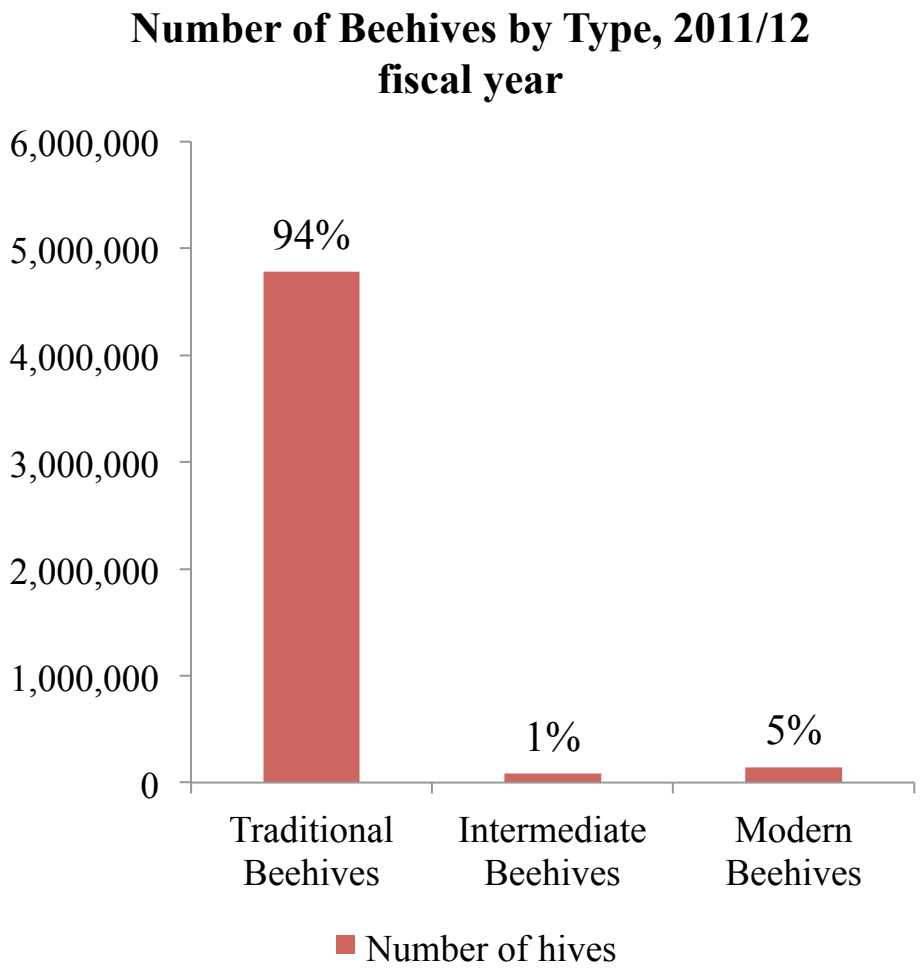


Value Chain Assessment

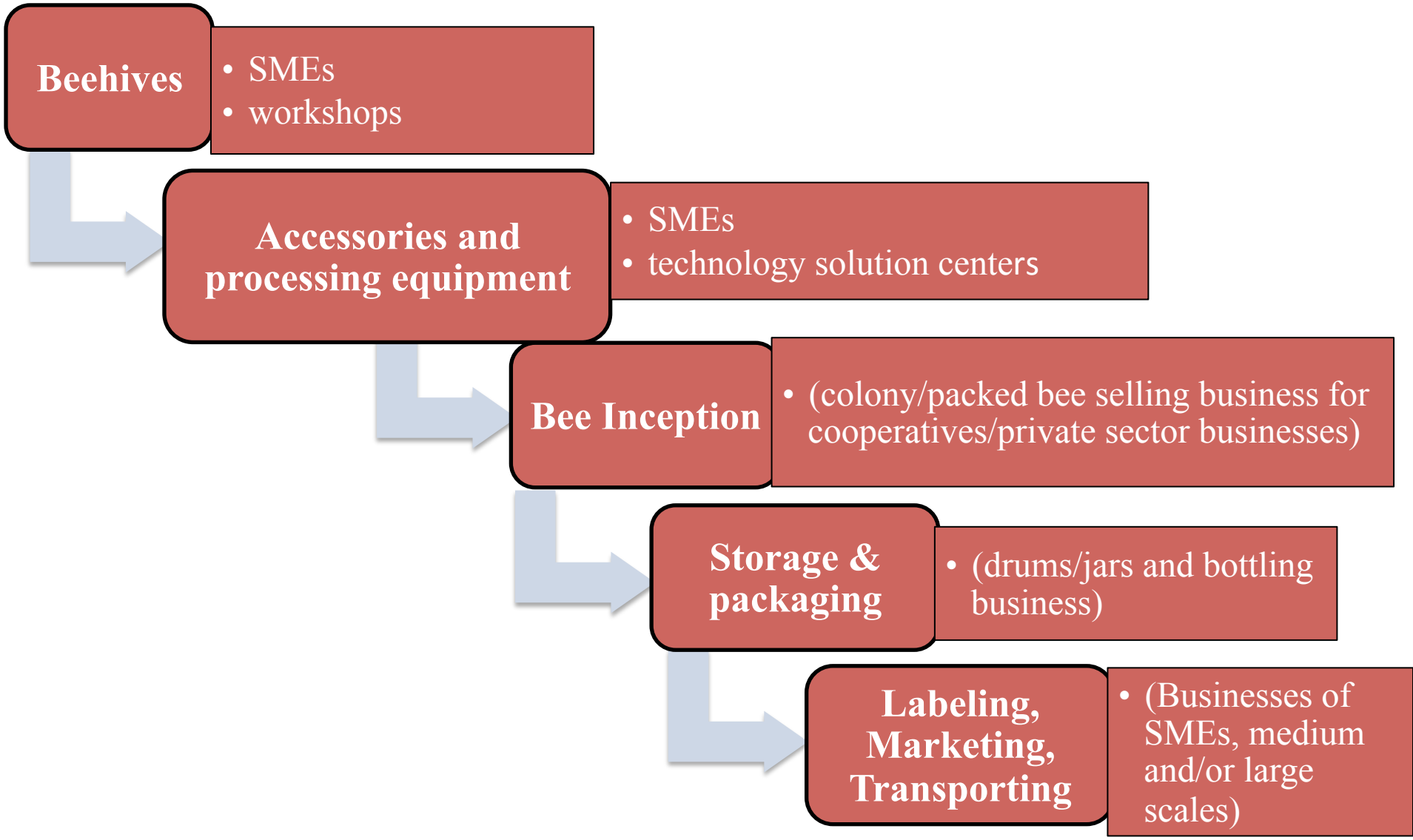
- **Realized:** 8% of production potential and 20% of product items!
- **Opportunity:** Growing and unsatisfied domestic and promising international markets exist!
- **Actual Shortcoming:** Processors calling for good quality and bulk supplies!
- **Inference:** Bottleneck at the production side!

✓ 94% of production undertaken using traditional systems

✓ Low yield and low quality from the traditional system



If we can increase production using the modern system while also maintaining the traditional, it will have a flow-on effect across five industries …

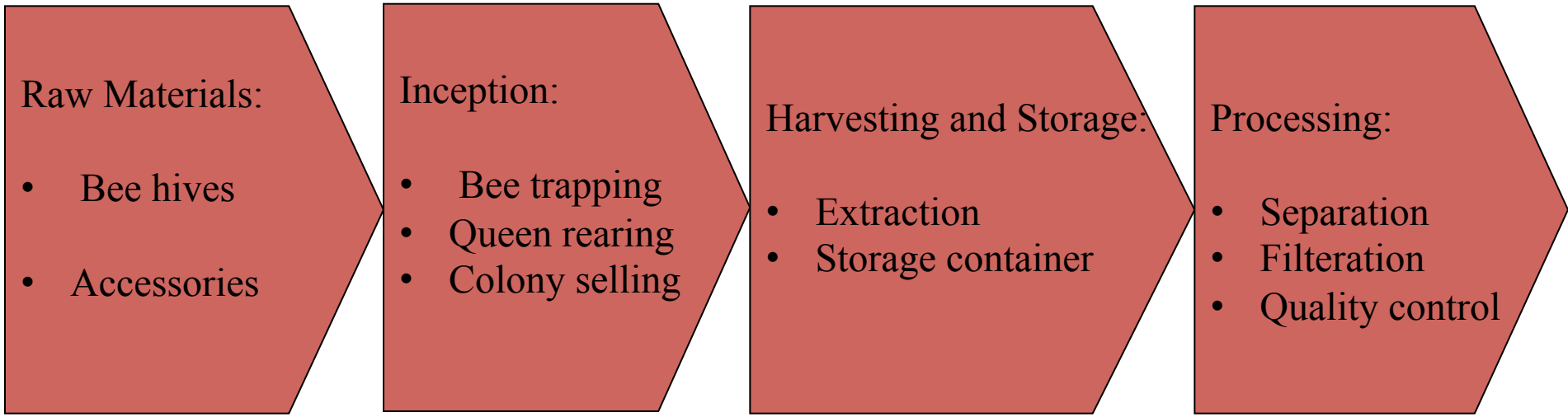


If only 1% of Ethiopia's traditional production system is augmented by an improved method of production ….

Areas of Impact	Estimated result values/ volume
Improved beehives business (47,725 new modern beehives)	85,905,000 ETB
Colony sells business	23,862,500 ETB
Business of accessories at the production and harvesting stage	51,208,925 ETB
Average packing business	2,321,344 ETB
Average increment in yield	1,431,750 kg
Average employment creation	Around 9,000 jobs
Average increment in foreign exchange generation (if 50% of the new yield from the new modern beehives gets exported)	2,391,022 USD

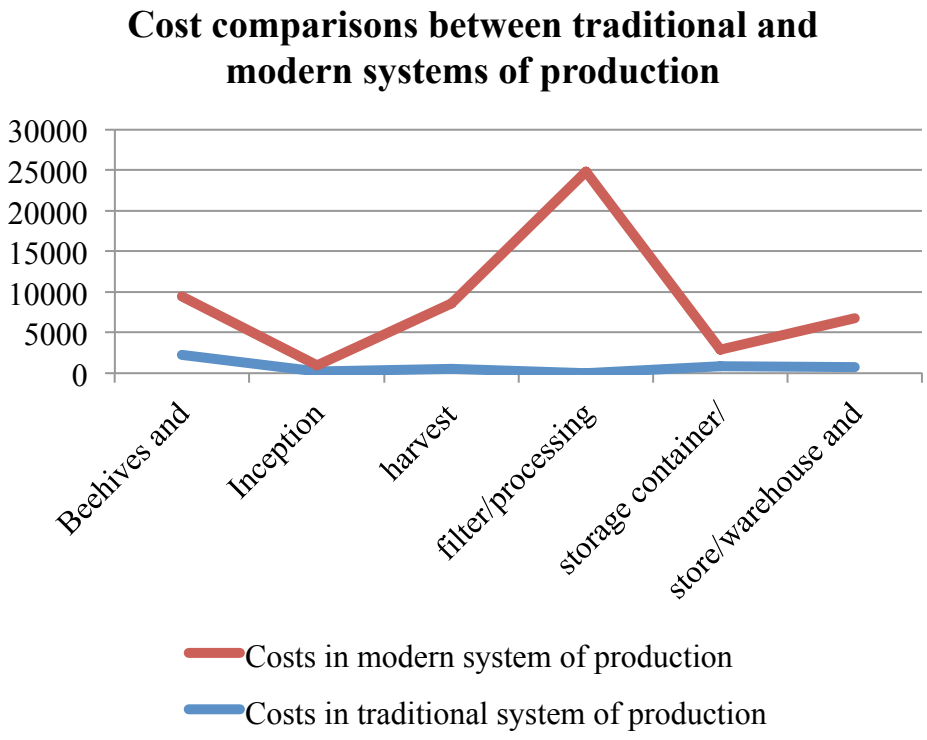
… generating integrated, self-sustaining profitable industry

Increased raw materials, technology development, yield and employment creation



… **Even if commercial consumption in both domestic and international markets DOES NOT grow, augmenting 1% of the traditional system with a modern one would result in** 1,431,750 **kg (est.) additional yield and around 9,000 (est.) job creation.**

… cost and income comparisons between traditional and modern systems of production …



System of production	Product Items	Sales prices
Traditional- hive based system	Crude honey	45 - 50 ETB
	End price of crude honey (at tej houses mostly)	50 - 60 ETB
Modern-hive based system	Semi-filtered honey	50 - 60 ETB
	Processed table honey	80 - 120 ETB
Traditional- (also modern- to some extent) hive based systems	Wax	200 ETB

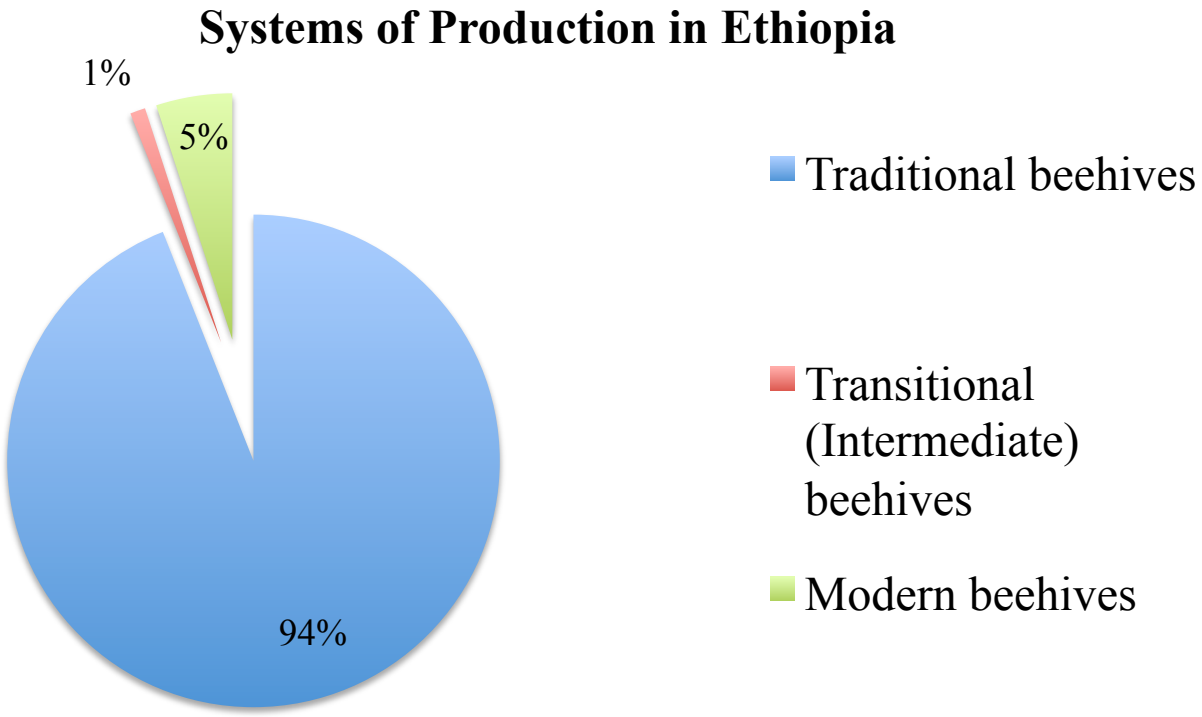
… cost of production using the traditional system is 0.55 times lower while the generated income is only 42% times higher in the case of the modern system! PLUS the modern system has lower wax yield!

4- So, how can we make honey and beeswax work?

How to transition to the modern system securing better yield and returns?

- Lower the cost of the modern system
- Increase return of yield from the modern system ***(bulk supply, value addition, niche market –differentiation)***

How to influence market forces in the industry …



After decades of modern beehive expansion efforts, adoption rate remains at 5% producing less than 10% of production capacity at the face of a growing market!

What makes our effort different? ***(Private sector driven intervention)***

The part I^2 plays in this environment …… ?

Government (Ministry of Agriculture and regional agricultural bureaus, technology centers, research institutes)

- Provide regulatory framework
- Provide technology development, dissemination and training

Donors and Financiers eg. USAID (ACDI/VOCA); SNV (ASPIRE)

- Provide guarantees/loans/grants
- Provide inputs/trainings
- Market entry facilitation

Understand the industry first so as to stimulate/influence it!

Apiculture Board/Unions/ Cooperatives/Associations

- Advocate for needed changes in policy environment
- Coordinate actors/activities in industry
- Facilitate access to inputs/finance/ training

Private Sector (SMEs and Medium scale processing/exporting businesses)

- Input production/import
- Production (Beekeeping)
- Processing
- Packing, Transporting & Marketing

5-What is the position of Ethiopia in the global market?

Bees and honey consumers are almost **everywhere** on the planet…

However, **only four countries dominate global production of honey** (global production is 1.5 MT/Yr)

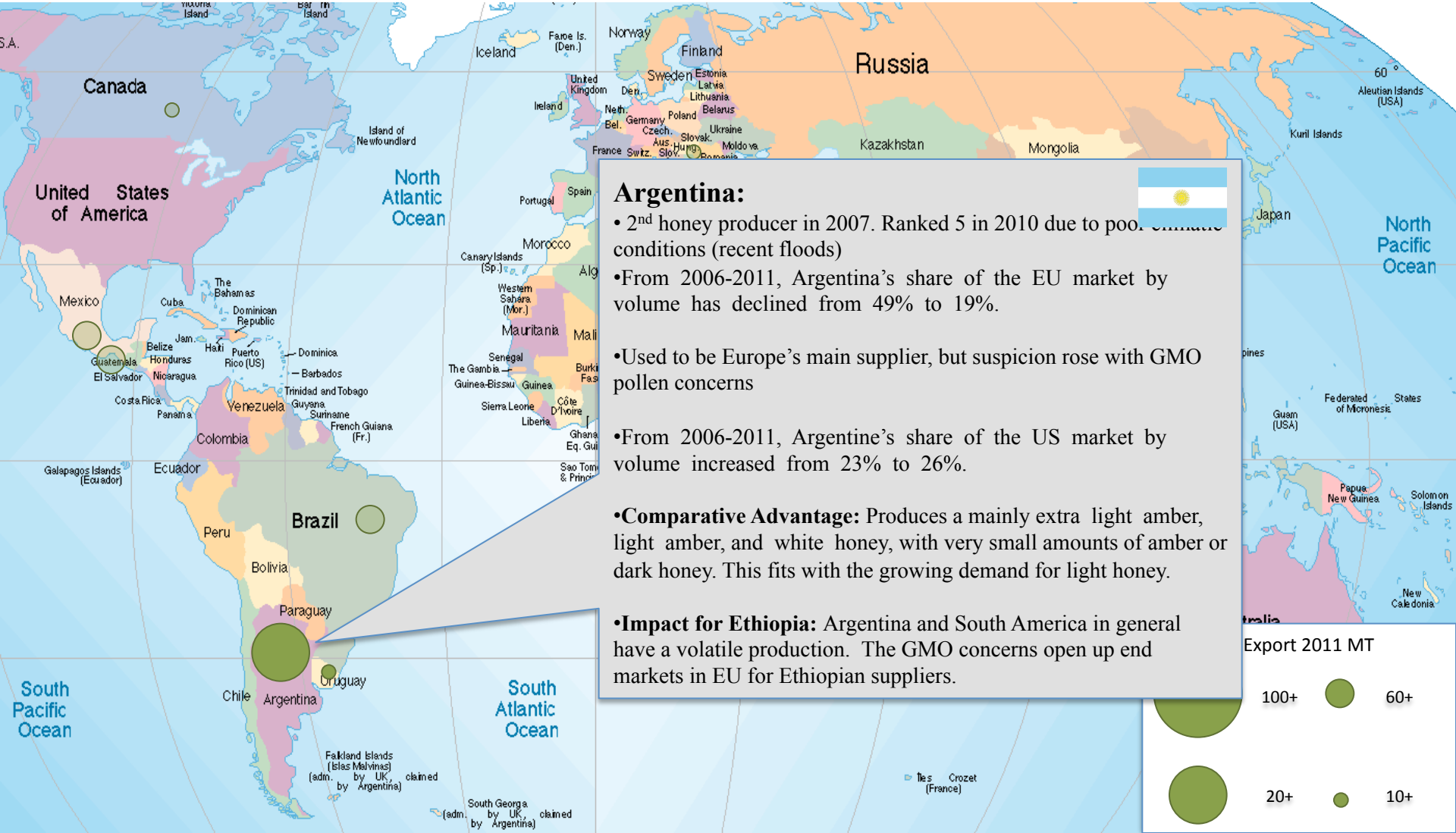
Less than a dozen countries drive global exports

China: the Low Cost Supplier

China:

- 1st honey producer,
- 39% of all world honey imports (excluding intra-EU trade) in 2011.
- Largest supplier of EU
- **Comparative advantage:** lower price, large scale, growth on the low-end market segment.
- **Impact for Ethiopia**: Does <u>not</u> threaten the higher quality honey market

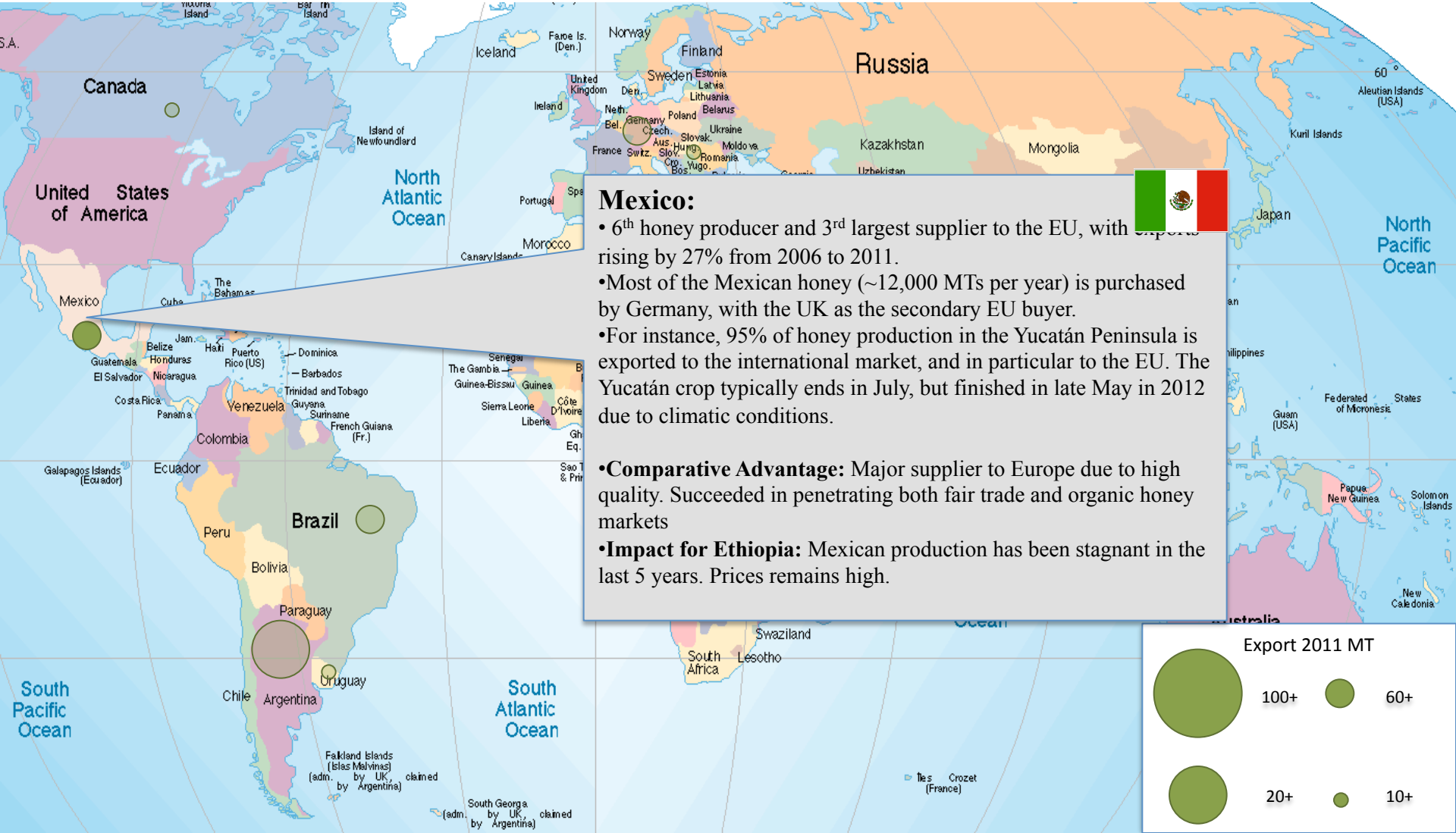
Argentina: good light middle-priced honey with an increasing global demand



Argentina:

- 2nd honey producer in 2007. Ranked 5 in 2010 due to poor climatic conditions (recent floods)
- From 2006-2011, Argentina's share of the EU market by volume has declined from 49% to 19%.
- Used to be Europe's main supplier, but suspicion rose with GMO pollen concerns
- From 2006-2011, Argentine's share of the US market by volume increased from 23% to 26%.
- **Comparative Advantage:** Produces a mainly extra light amber, light amber, and white honey, with very small amounts of amber or dark honey. This fits with the growing demand for light honey.
- **Impact for Ethiopia:** Argentina and South America in general have a volatile production. The GMO concerns open up end markets in EU for Ethiopian suppliers.

Mexico: High price for high quality

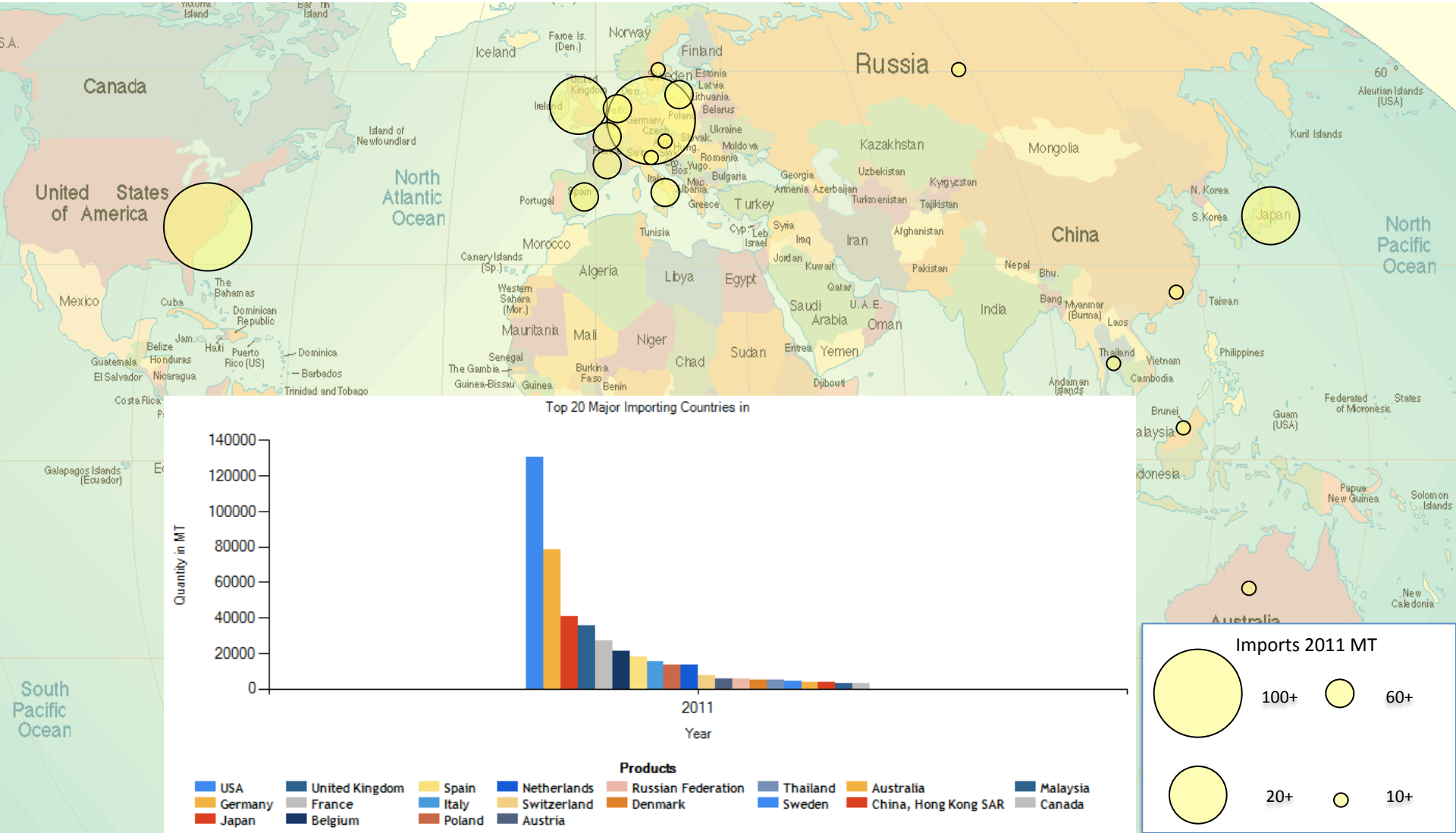


Mexico:

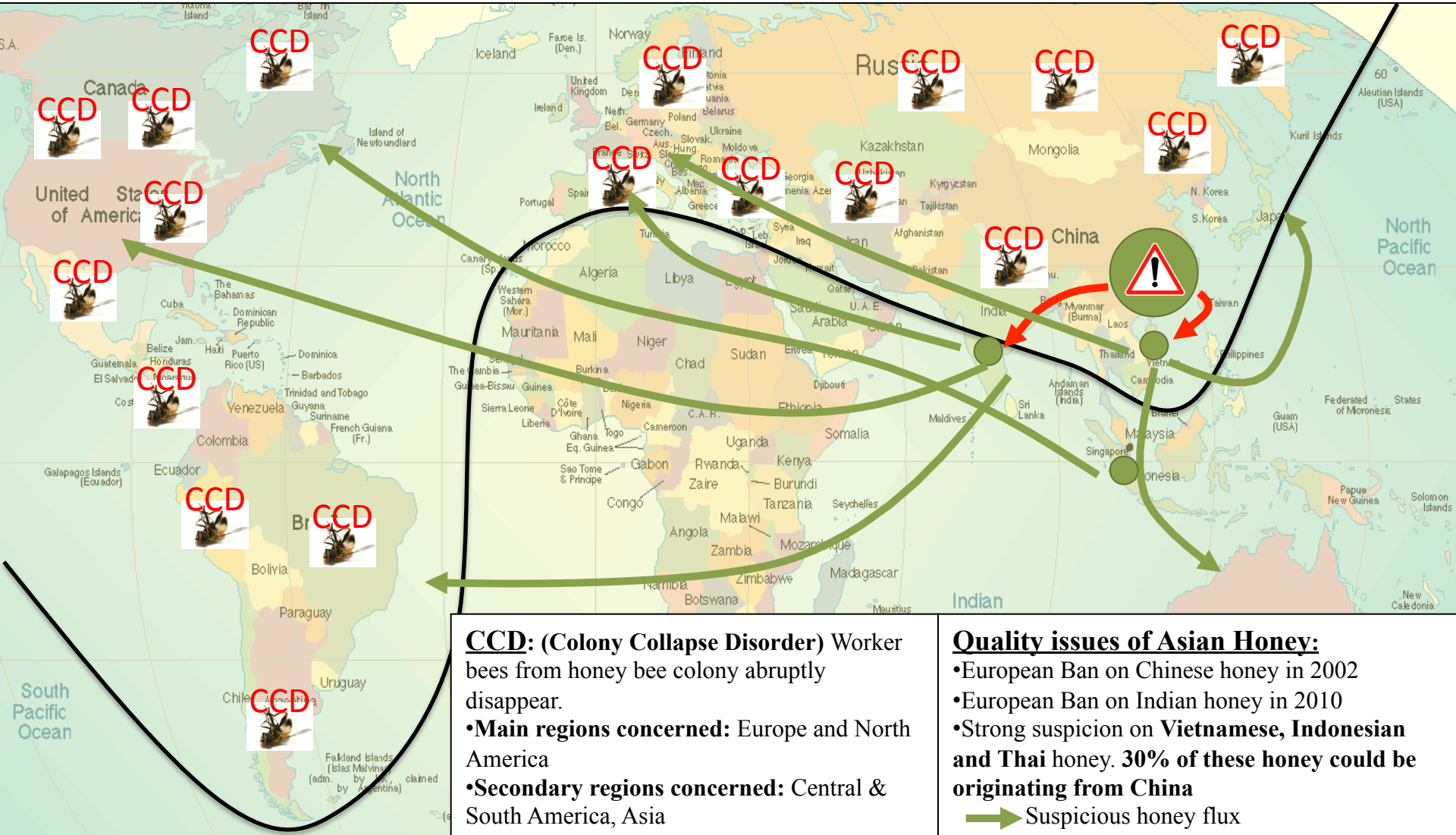
- 6th honey producer and 3rd largest supplier to the EU, with exports rising by 27% from 2006 to 2011.
- Most of the Mexican honey (~12,000 MTs per year) is purchased by Germany, with the UK as the secondary EU buyer.
- For instance, 95% of honey production in the Yucatán Peninsula is exported to the international market, and in particular to the EU. The Yucatán crop typically ends in July, but finished in late May in 2012 due to climatic conditions.

- **Comparative Advantage:** Major supplier to Europe due to high quality. Succeeded in penetrating both fair trade and organic honey markets
- **Impact for Ethiopia:** Mexican production has been stagnant in the last 5 years. Prices remains high.

The main importer countries are rich



The global honey market is facing diseases and quality concerns



CCD: (Colony Collapse Disorder) Worker bees from honey bee colony abruptly disappear.

- **Main regions concerned:** Europe and North America
- **Secondary regions concerned:** Central & South America, Asia

Quality issues of Asian Honey:

- European Ban on Chinese honey in 2002
- European Ban on Indian honey in 2010
- Strong suspicion on **Vietnamese, Indonesian and Thai** honey. **30% of these honey could be originating from China**

→ Suspicious honey flux

The 2013 production trend is characterized by:

- A tight overall world honey production
- An increasing worldwide demand
- Extreme global climate conditions
- And a decline in white honey production (and higher price)

Canada: The 2012 crop was low (65 million lbs). High demand in the US

Europe: Europe produced enough honey to meet approximately 60% of its demand in 2010. Spain and Germany are the leading producers

Brazil: good source of high quality honey to the US and exports most of the organic raw honey consumed in the US

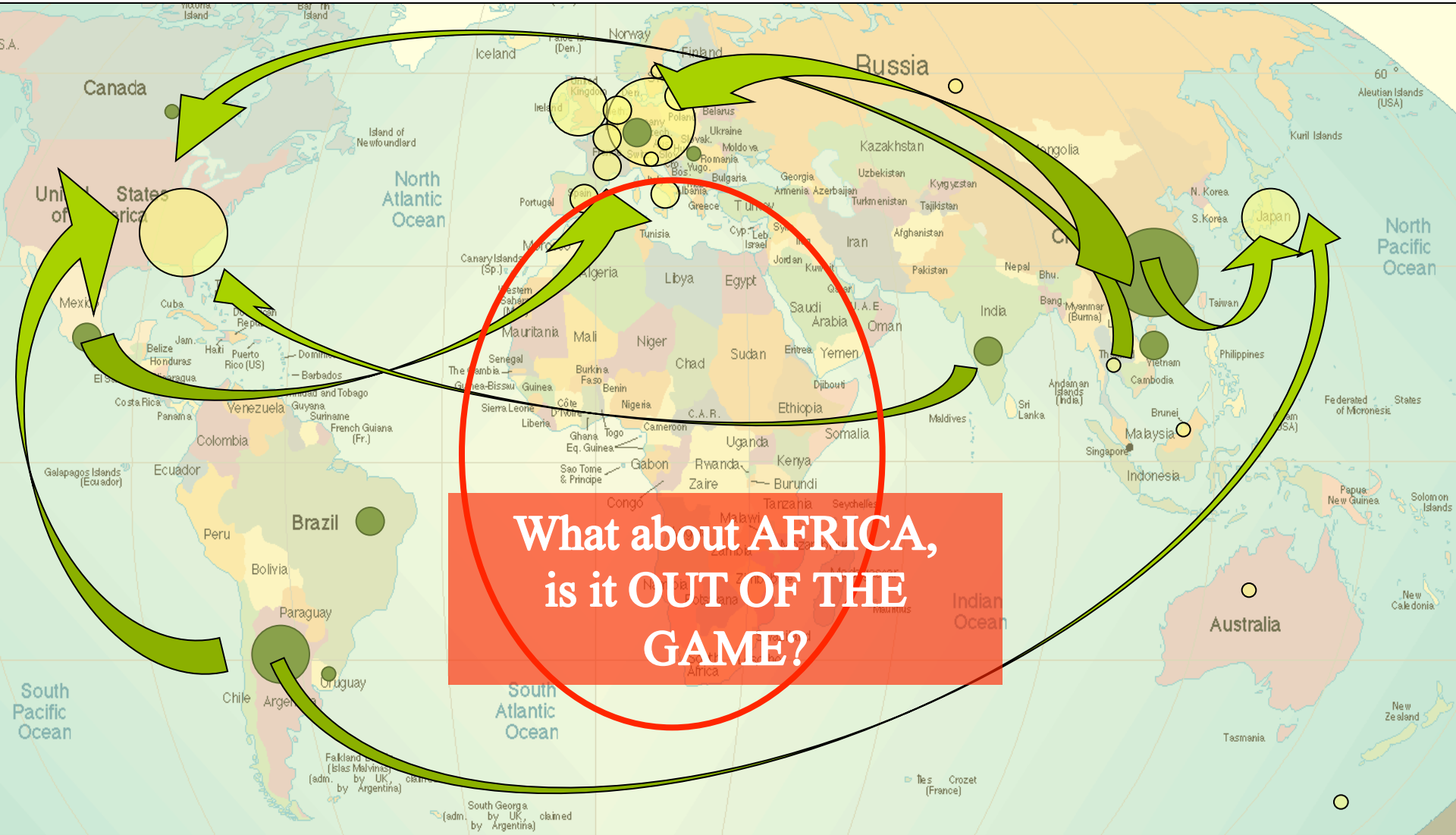
Argentina: After recent GMO problems in Europe, Argentina found an alternative to the US market

China: Even if China is far from end markets it is the largest exporter. 2/3 of it's production is consumed locally and thus it is also the world's largest consumer

Vietnam: Good worldwide supplier of Light Amber honey. Still suspicion circumvention of Chinese honey. Work on the diversification of their floral sources

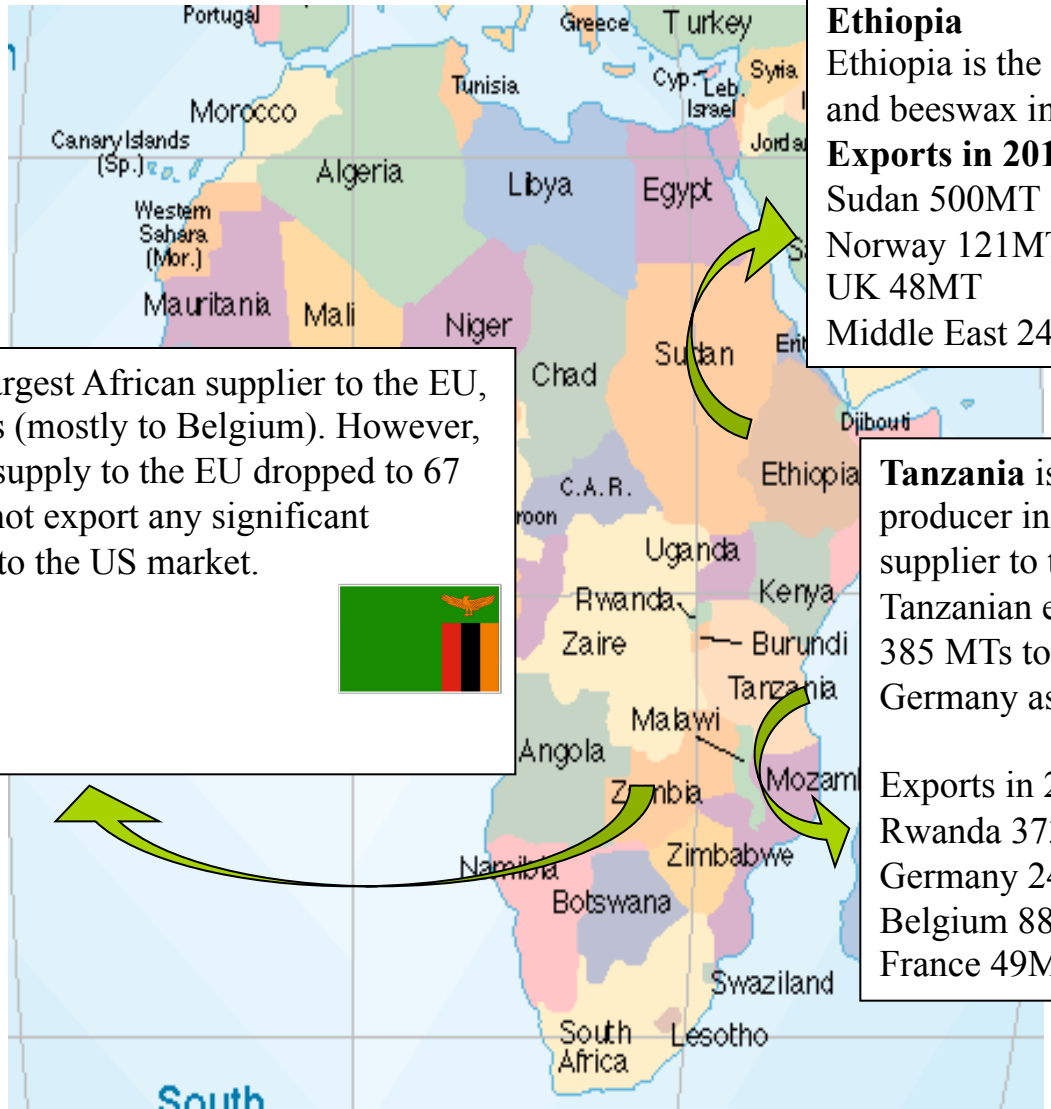
India: Good source of ELA and Light Amber honey. Quality issues (EU banned Indian honey in 2010/2011). Large volumes of this honey still enters the U.S. market. Strong demand for this honey will probably increase Indian raw honey prices in 2013.

International Trade is driven by China, Argentina and Mexico while the demand for honey is increasing worldwide



SURELY NOT! **African honey exports to Europe are growing**.

However, there are no significant exports to the US



Ethiopia
Ethiopia is the largest producer of honey and beeswax in Africa
Exports in 2011:
Sudan 500MT
Norway 121MT
UK 48MT
Middle East 24T

See next page

Zambia was the largest African supplier to the EU, exporting 518 MTs (mostly to Belgium). However, in 2011, Zambian supply to the EU dropped to 67 MTs. Africa does not export any significant amounts of honey to the US market.
Exports in 2011:
UK 67MT
Norway 43MT
Botswana 12MT

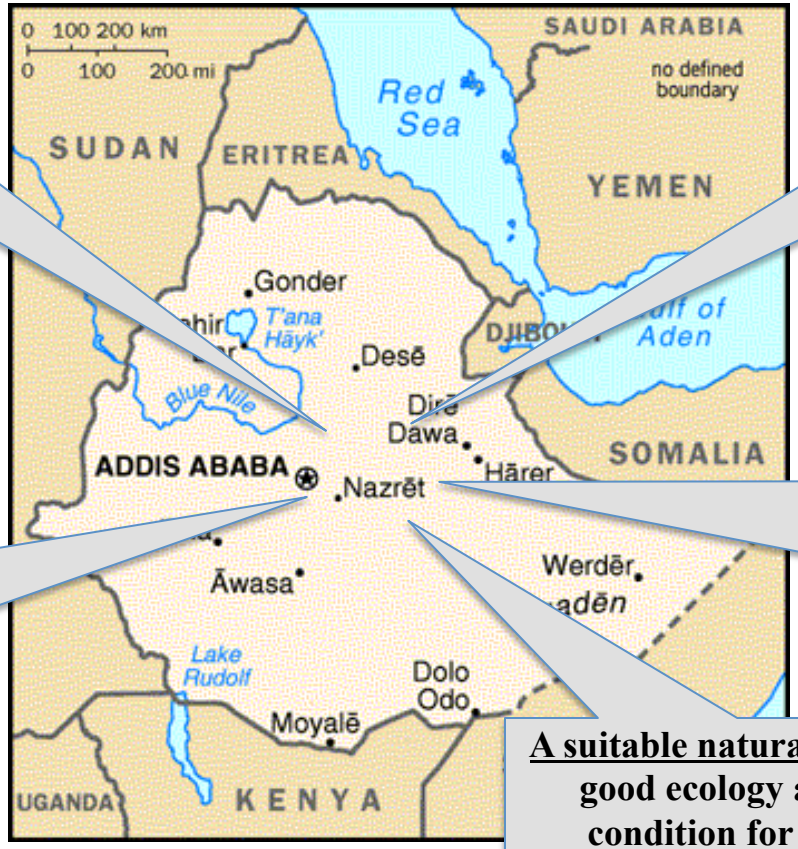
Tanzania is the second largest honey producer in Africa and the top African supplier to the EU. From 2006-2011, Tanzanian exports to the EU declined from 385 MTs to 327 MTs, with Belgium and Germany as primary buyers.

Exports in 2011:
Rwanda 373MT
Germany 240MT
Belgium 88 MT
France 49MT

Ethiopia has a strong and ancient know how for beekeeping

Supply potential:
the current output level is only around 8% of the country's overall production potential

Annual Production:
40,000 tons of honey and 400 tons of beeswax annually. Largest production in Africa

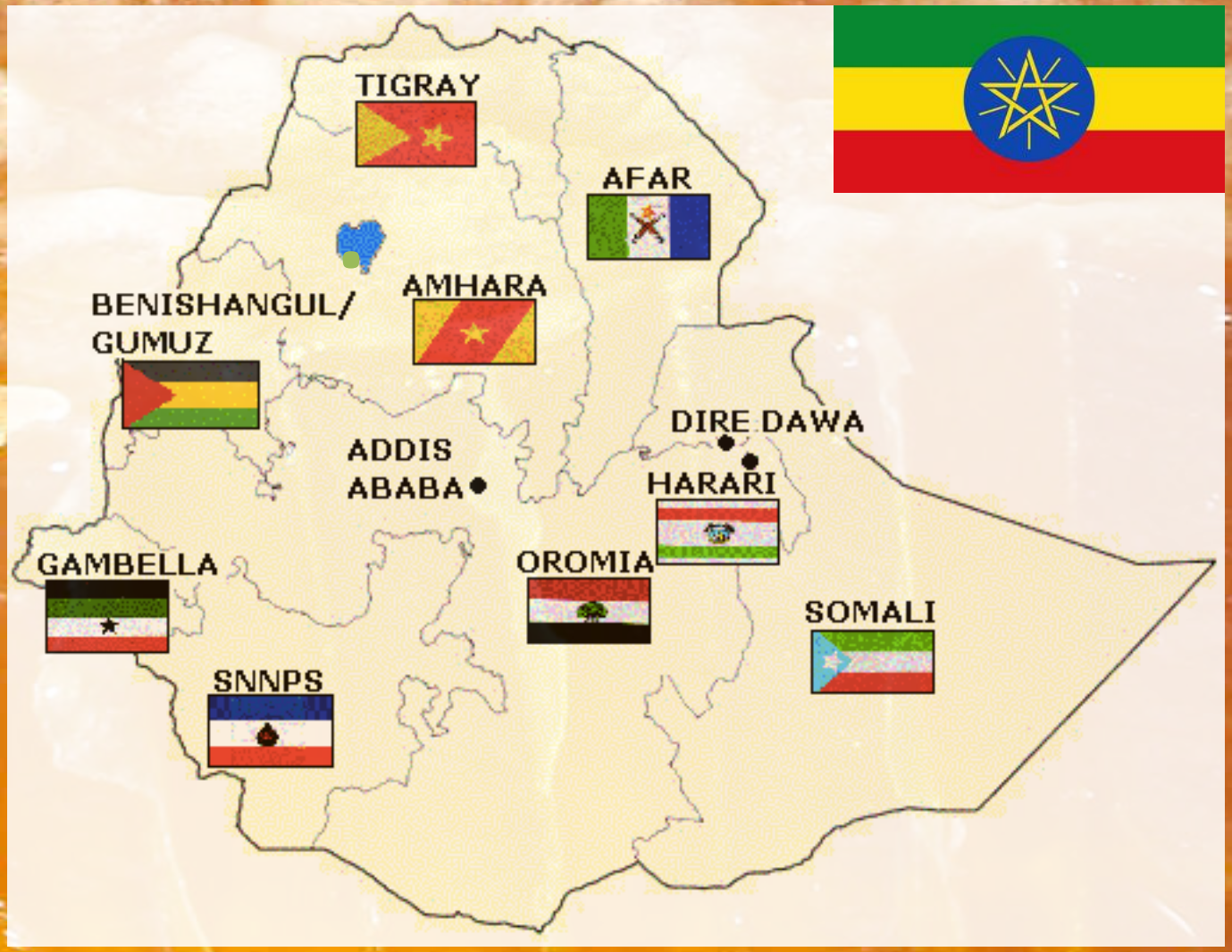


Huge bee colonies:
Five distinct wild bee species of 8 to 10 million colonies 4.8 million of which are hived

History:
A long tradition of beekeeping (since approximately 3500–3000 BC)

A suitable natural environment:
good ecology and climatic condition for beekeeping

6-What are the Ethiopian regional production specificities?



1. Amhara, North Western Ethiopia

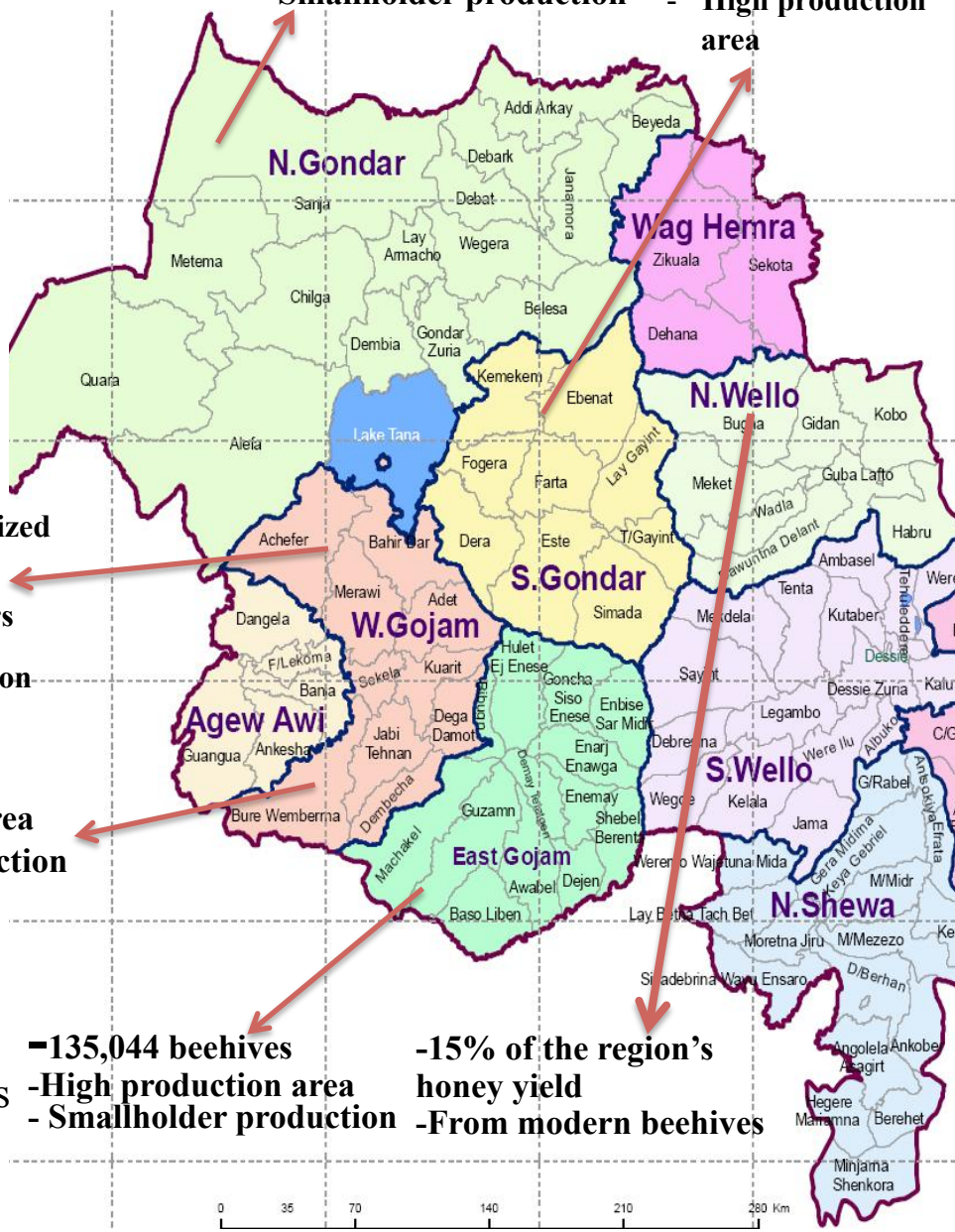
Produces 19% of the country's total beehives:

- Has a total of 965, 293 beehives:

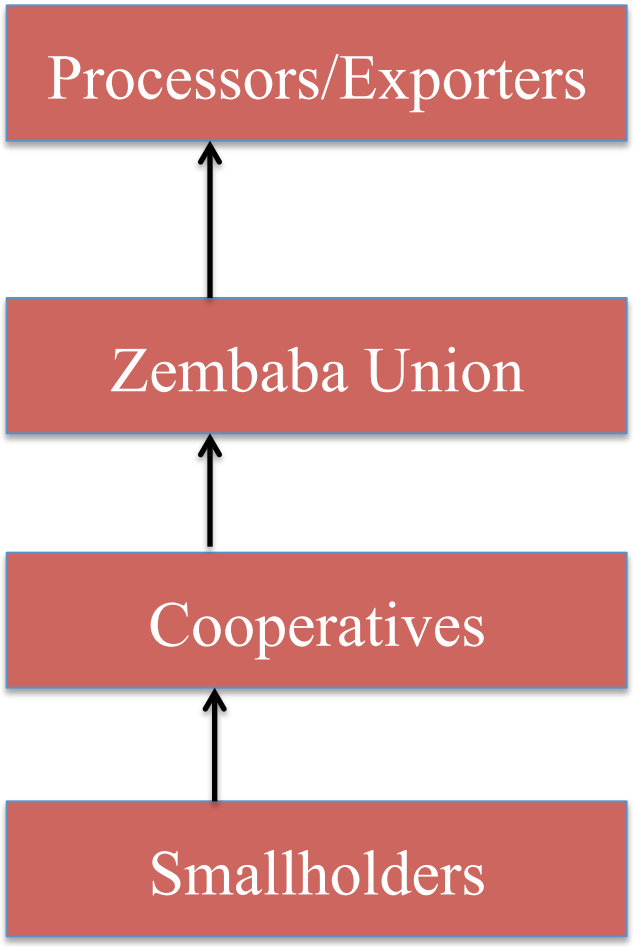
✓ Mainly modern followed by intermediate and traditional production systems respectively

- Growing production and supply for processors

- Beza Mar – to establish processing plant in the region.
- Zembaba Union to set up beehives and accessories processing plant in the region.



Regional Success story: **Zembaba** is the best example in Ethiopia of how a well integrated chain can secure high volume, quality & price …



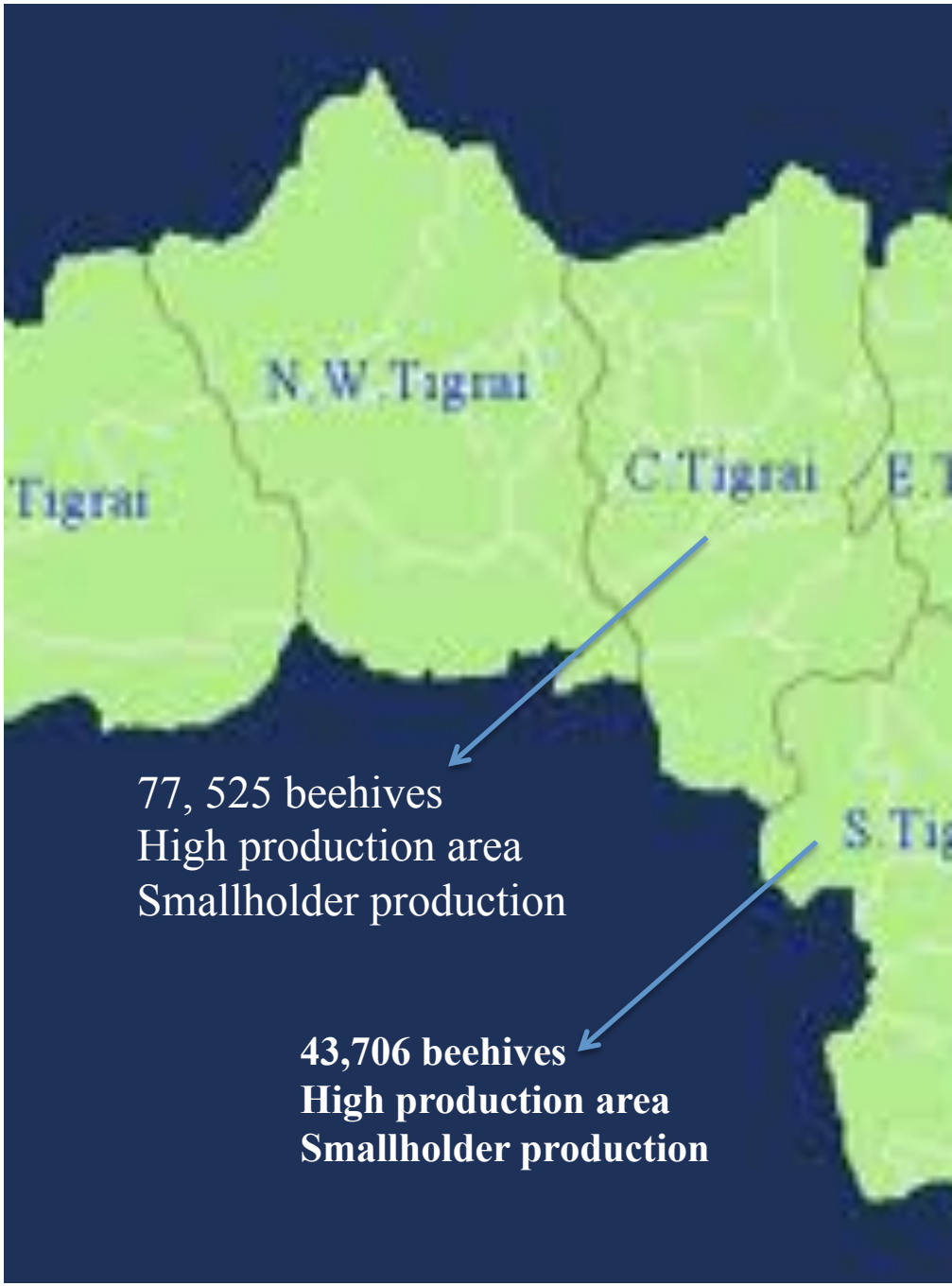
… exporting 1,435 quintals in 2012/13!

Due to the bulk supply and quality advantage, processors are increasingly buying and are providing special arrangements of trading with Zembaba

- Processors are providing 50% payment in advance (Tutu and Apinec)
- With the pre-financing, smallholders receive payments upon selling

Tigray Region, Northern Ethiopia

- 219,036 total beehives, 4% of the country's total beehives, 5th largest honey producer
- ✓ Mainly modern beehives (highest in number from other regions), followed by transitional and traditional ones respectively
- Known for its quality and highly favored extra white honey
- Crude honey from the region fetches the highest price (average 150 ETB/kg)
- Highly attractive local market but limited production/ yield
- Presence of largest honey processor (Dimma) supplying extra white table honey for both domestic and export market
- Presence of another strong exporting processor, Comel



Oromia
South Western Ethiopia

- Oromia has the largest number of beehives (2,738,127 million hives) and the highest honey yield
- Jimma followed by Illobabor and West Wellega respectively are the high yield areas from the region
- Mainly traditional followed by intermediate and modern beehives respectively
- Absence of (poor) cooperatives
- Due to fragmented small scale production, low access to finance, inputs & markets
- Huge colony, forage & production potential but most unexploited
- Presence of two notable processors Rahi-honey and Yeshi Mar sourcing from the region!

-West Wellega: 334,732 beehives

<u>Illobabor</u>
- 415,547 beehives
- Traditional smallholder production

<u>Jimma</u>
- 514,665 beehives
- Traditional smallholder production

Southern Region, Southern Ethiopia

- 16% of the nation's beehives

Sheka
-78,261 beehives
- High production area

- Mainly traditional followed by intermediate and modern systems
- High vegetation cover and bee colony availability but traditional system of production - quality challenge!

- Cooperatives and unions exist

✓ Bench Maji union
✓ Keffa union
✓ Shebedino union

- Integrated production practices exist
- APINEC and Beza Mar have their own sites at (Bonga and Sheka respectively)

Bench Maji
-37,769 beehives
- High production area

South Omo
-78,261 beehives
- High production area

keffa
-150,835 beehives
- High production area

Sidama
-90,559 beehives
-High production area

Central Ethiopia actually has the largest market– but is one of the low production areas ….

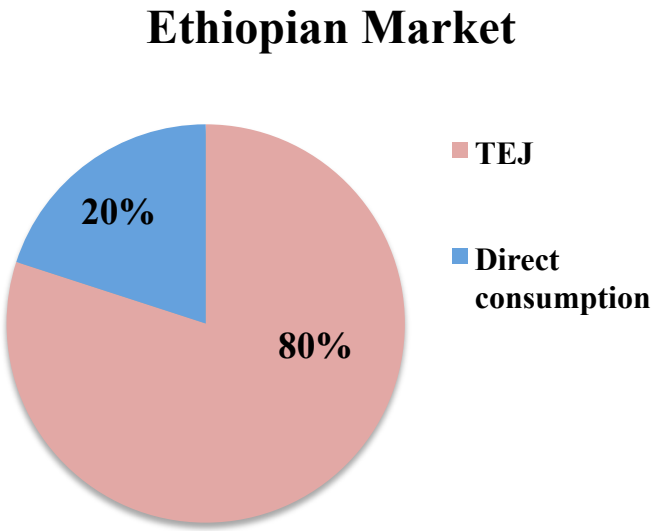
- Addis Ababa has 60% of Ethiopia's urban population
- Addis has high income per capita entailing relatively higher demand for processed commercial (table) honey and beeswax
- Crude honey is marketed in bulk at Mar Verendah. This honey is mainly used for tej. Filtered honey is also marketed as table honey.
- Other major end market outlets for table honey are supermarkets; the common brands are Tadele, Dima, Tutu within price ranges 70 – 120 ETB/bottle
- Low domestic demand for table honey-high price but low volume sales!

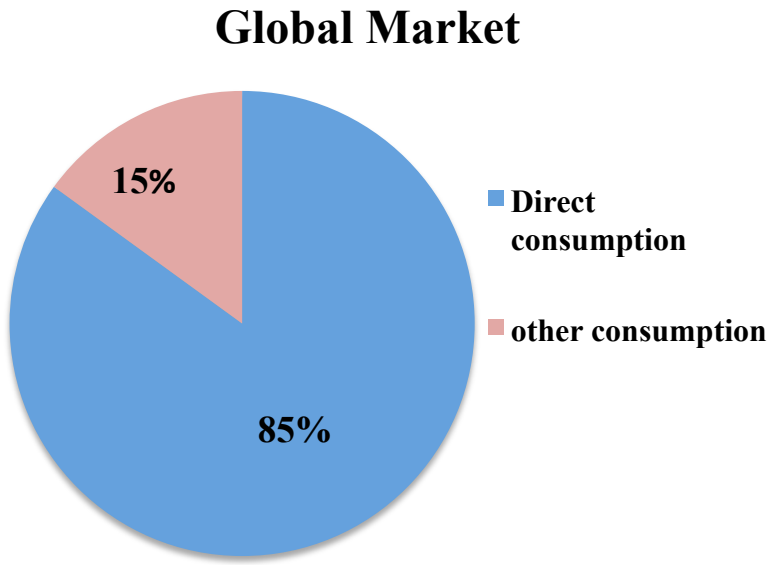
7-The Ethiopian Honey Value Chain

Much more Upside Potential than Downside Risk in the Ethiopian Honey Sector

GENERAL SWOT ANALYSIS for the ETHIOPIAN Bee Products SECTOR

Ethiopia has a huge local market for honey consumption, but only for few products





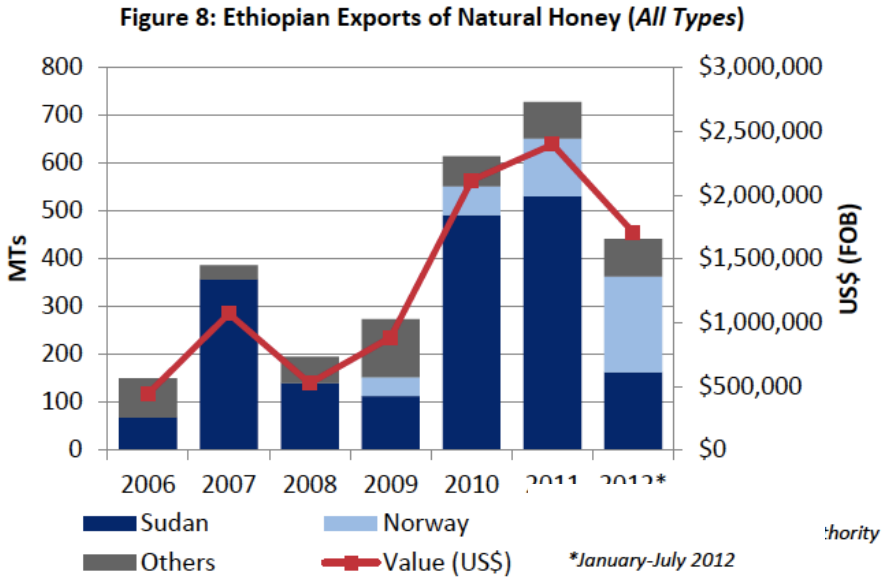
- Most of the honey production is used to brew Tej, which requires little quality improvement (no need to separate the honey from the beeswax)

Products: **Tej uses up to 80% of total honey production in Ethiopia**

(Large domestic market exists for honey produced in Ethiopia)

- Alcoholic beverage made by fermenting honey
- Similar beverages: Metheglin, with added spices such as cinnamon and vanilla; Melomel mead, with added fruit.
- For Tej brewing, old honey gets a better price (better absorption of water during "Tej" preparation and fermentation)
- Currently, average domestic price of honey for Tej production is per kg (50-60 ETB)

Although **Ethiopian honey exports are beginning to take off…**



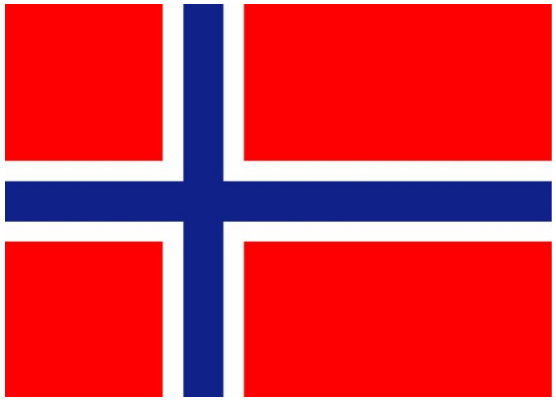
2012/ Honey Export by Destination		
Destination	**Volume in Kg**	**%**
Sudan	**444091**	56.2
Norway	**220876**	30.14
United Kingdom	**41760**	5.06
Germany	**20300**	2.68
Saudi Arabia	**11160**	2.33
Yemen	**7154**	1.66
Kuwait	**10080**	1.42
autres	**8030**	1.05
Grand Total	**763451**	**100**

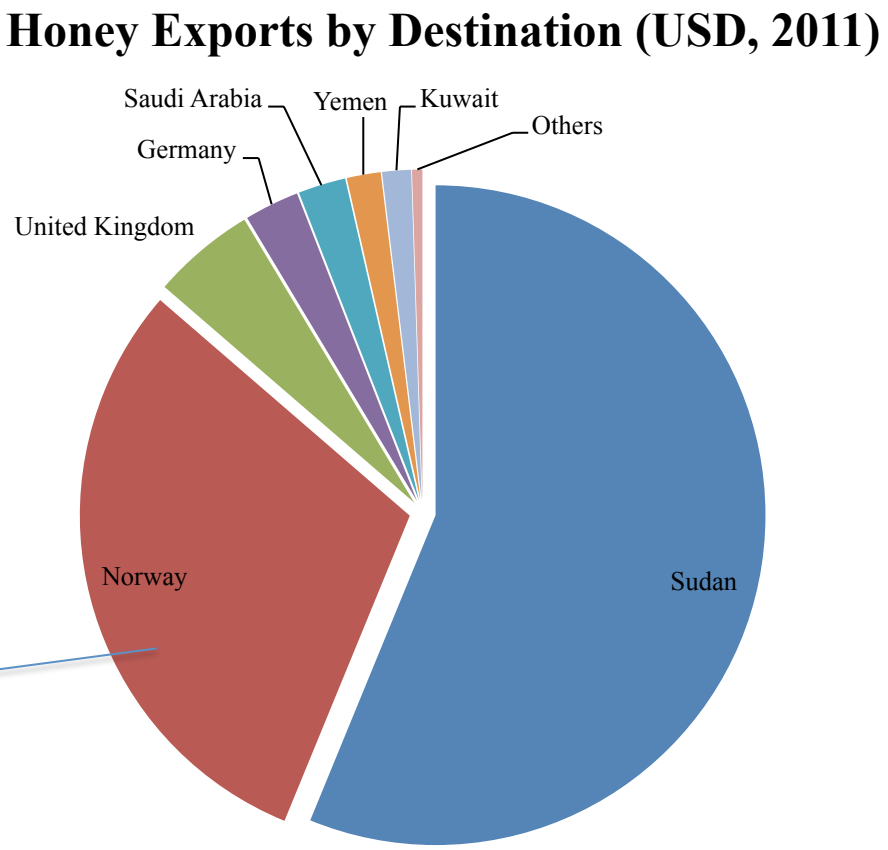
Year 2010 in MT	**Production**	**Exports**	**Ratio**
Ethiopia	53675	2397	**4.4%**
Argentina	59000	58625	**99%**

Source: FAOSTAT

… they still represent only 4.4% of the country's total production; Argentina, a comparable country in terms of production, exports more than 90% of its yield

Norwegian Success Story: Recent cooperation with Norway has produced substantial results





Why does Norway account for 30% of Ethiopia's honey exports?

Norwegian Success Story: Both business leaders and Norwegian Aid engaged in this innovative project

- A key challenge for the Norwegian cooperative "Honningcentralen" - to find good quality import honey to mitigate climate-related fluctuations in domestic honey supply

- They identified Ethiopian companies for a commercial partnership

- On August 27th, 2009, the first 20tn shipment of Ethiopian honey was received in Oslo by Norway's minister of development Erik Solheim

Norwegian Success Story: …Ethiopia is unable to capture most of the value added

- 221tn of honey were imported to Norway in 2012 and former manager of Honningcentralen, Roger Hem, expects this year's imports to hit 400tn.
- The honey arrives in 60kg barrels. It is further packaged and branded in Norway!
- "African Honey from Ethiopia" hit shelves, selling at approximately $16.5/kg before tax
- Its taste is similar, or perhaps sweeter, than the local honey Norwegians indulge at a rate of 1300tn per year (and growing)

Price Gap: export prices of Ethiopian honey are high but the country doesn't keep most of the value added

- Over the last two years, **the international price for honey was $3.40/kg**
  - BezaMar, Ethiopia's largest honey exporter, sold its organic honey at $4/kg in 2008. Exports grew by 25% and 28 % in 2009 and 2010 respectively, though the international price offer dropped to $3.40/kg.
  - The fall in unit price was compensated for by an increase in the quantity

- **Price Gap:**
  - Even if Ethiopia fetches a decent price for bulk honey, most of the value added is lost because the labeling/marketing/ packaging are made abroad!

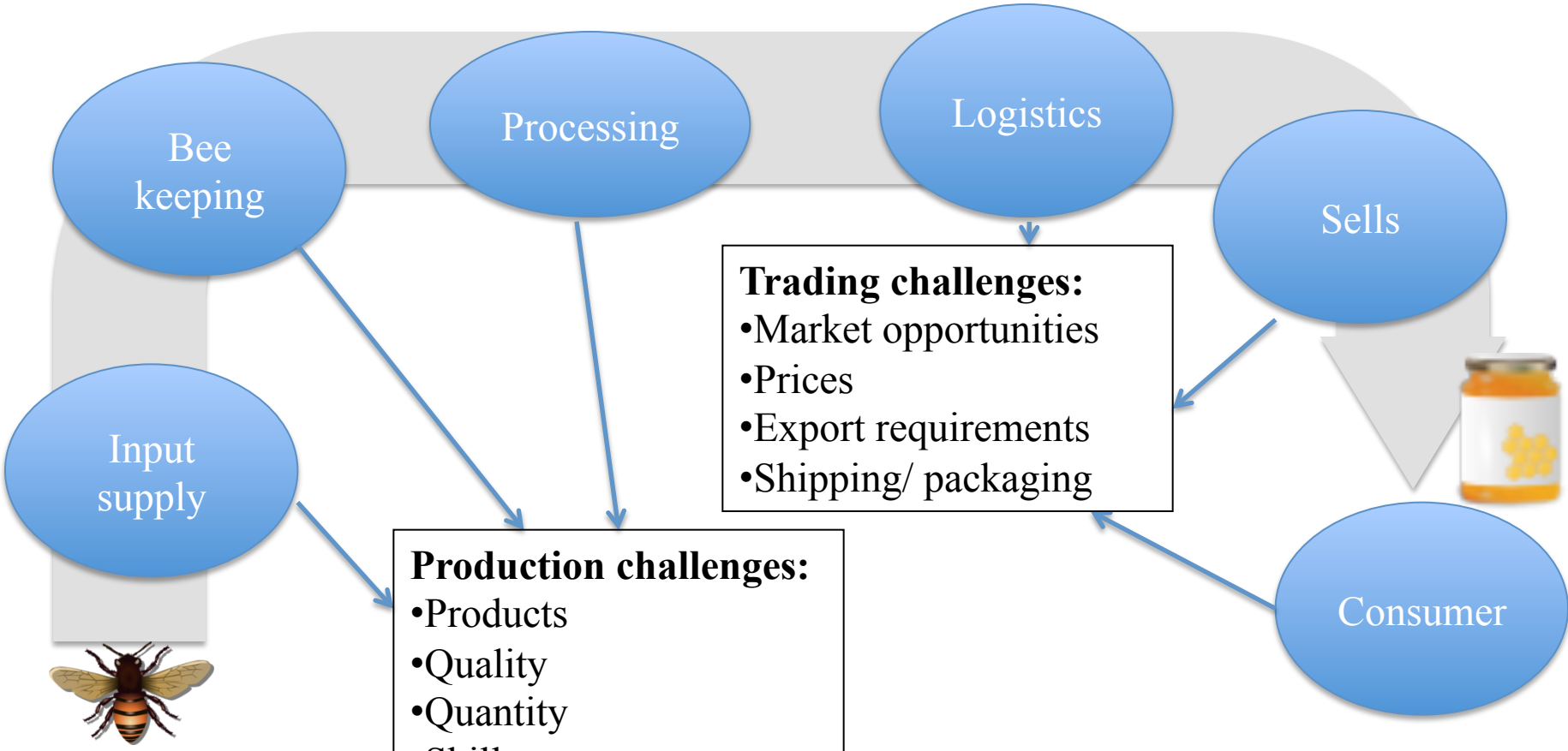
Ethiopia's lack of infrastructure impacts export

- The Ethiopian Shipping & Logistics Services Enterprise (ESLSE)

- Monopolist transportation operator in the multi-modal transportation system
- Doesn't have the capacity to handle the volume of cargo.
- Thousands of stranded containers at the port of Djibouti, creating massive delays and increased demurrage fees

The port of Djibouti is one of the most well-equipped ports in East Africa, with three terminals including container and ro-ro (special cargo) terminals. International shipping service is available to Djibouti from the United States.

Looking forward, what are the prospects for Ethiopian honey?



1) Even though most of the demand is for extracted honey, comb and chunk honey represent viable niche markets!

Honeys		
	Comb Honey	• Chunks of Honey-filled combs taken directly from the hive. • Easy to produce, Cheap to pack and market • Often recommended as a product with which to begin exports • Beekeepers can start their production
	Extracted Honey	• The liquid honey once it has been separated from the comb. • Products from Extracted Honey : Honey Butter, Whipped Honey, Consumer Honey
	Chunk Honey	•Combination of Comb honey and extracted honey bottled together

2) Upscale pioneering companies, such as BezaMar, engagement & growth in exports of Ethiopian honey!

- In 2007/2008: 349 out-grower relationships were established, with technical and organizational support (SNV) and financial grant from the business innovation fund.

BEZA

  - Skill transfers, high quality & high yield secured!

- **Today, Five other processors followed BezaMar's example resulting in a total export of 298 mt with a supply from a total of 8,193 out-grower beekeepers.**

…how to build on this experience? A partnership that helps Ethiopia to supply in bulk to the international demand!

- Opportunities for exports are huge:
  - Ethiopia has large production potential
  - There is growing demand from export markets
  - Organic honey is largely available in Ethiopia

- Natural high-end markets are:
  - EUROPEAN UNION
  - NORTHERN AMERICA

- A south-south partnership helps:
  - afford the supply for a growing demand of honey
  - gain from a southern country know-how and experience of entering the Northern markets

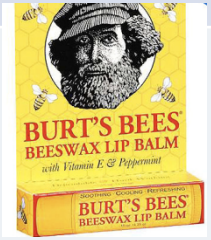
8- The Beeswax Value Chain

For commercial use, Ethiopia produces 2 types of Beeswax

- **Crude beeswax:** obtained from honeycombs after the removal of honey and after subjecting the material to a preliminary treatment such as melting, Cuming, decantation and molding.

- **Refined beeswax:** Refined beeswax, on the other hand, is obtained by subjecting the crude wax to further purification by melting and finer filtration.

Beeswax has different uses!

	Beeswax	
	**Honey comb foundation**	•Beeswax is mainly used to make honeycomb foundation for reuse by the bees.
	**Food/ Cosmetics/ Pharmaceuticals**	• As a coating for cheese, to protect the food as it ages. As a food additive, it is known as E901 (glazing agent). • Beeswax is an ingredient in moustache wax, as well as hair pomades. • Beeswax is an ingredient in surgical bone wax.
	**Candles**	•Beeswax is used commercially to make fine candles
	**Niche uses**	•As a component of shoe polish, furniture polish, •As a component of modeling waxes. •When blended with pine rosin, beeswax serves as an adhesive to attach reed plates to the structure inside a squeezebox. •Used to make lip balm.. •Used by percussionists to make a surface on tambourines for thumb rolls.

The uses in Ethiopia differ from the international ones!

- **In Ethiopia**:
  - 25% is used to make candles
  - In a recent development, wax is now used for honey-bees foundation in transitional and frame hives
  - Because of increased demand for wax in frame hives, **prices have risen 50%** (now 150/200 Birr per kilo (US$8/Kg))

- **Internationally:**
  - *Cosmetics Industry* (30%):
    - Requires first class beeswax that has not been overheated, pure and free from propolis
    - From US$8/Kg
  - *In pharmaceutical preparations* (30%)
    - As a coating for cheese, to protect the food as it ages. As a food additive, it is known as E901 (glazing agent).
    - Beeswax is an ingredient in moustache wax, as well as hair pomades.
    - Beeswax is an ingredient in surgical bone wax.

–Around 30 percent of world trade in beeswax is used by the pharmaceutical industry that, like the cosmetic industry, requires good quality wax.

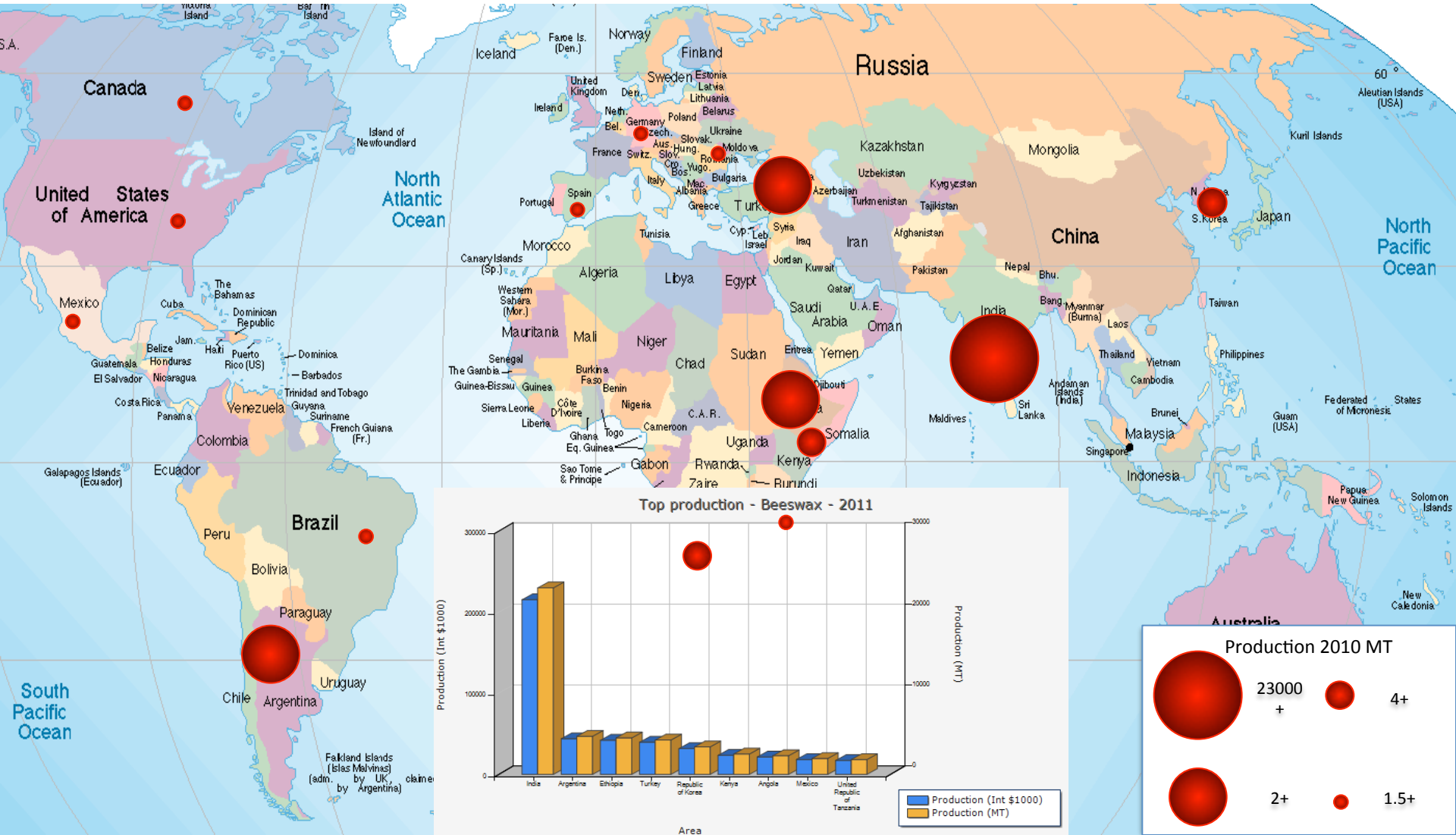
International beeswax quality issues

- The **coloration** of beeswax (shades of yellow, orange and red through to brown) is due to the presence of various substances, especially pollen. This difference in color is of no significance as far as the quality of the wax is concerned, but subjectively light colored wax is more valued than dark colored wax. If wax is dark because it has been over-heated then its value is much lower.

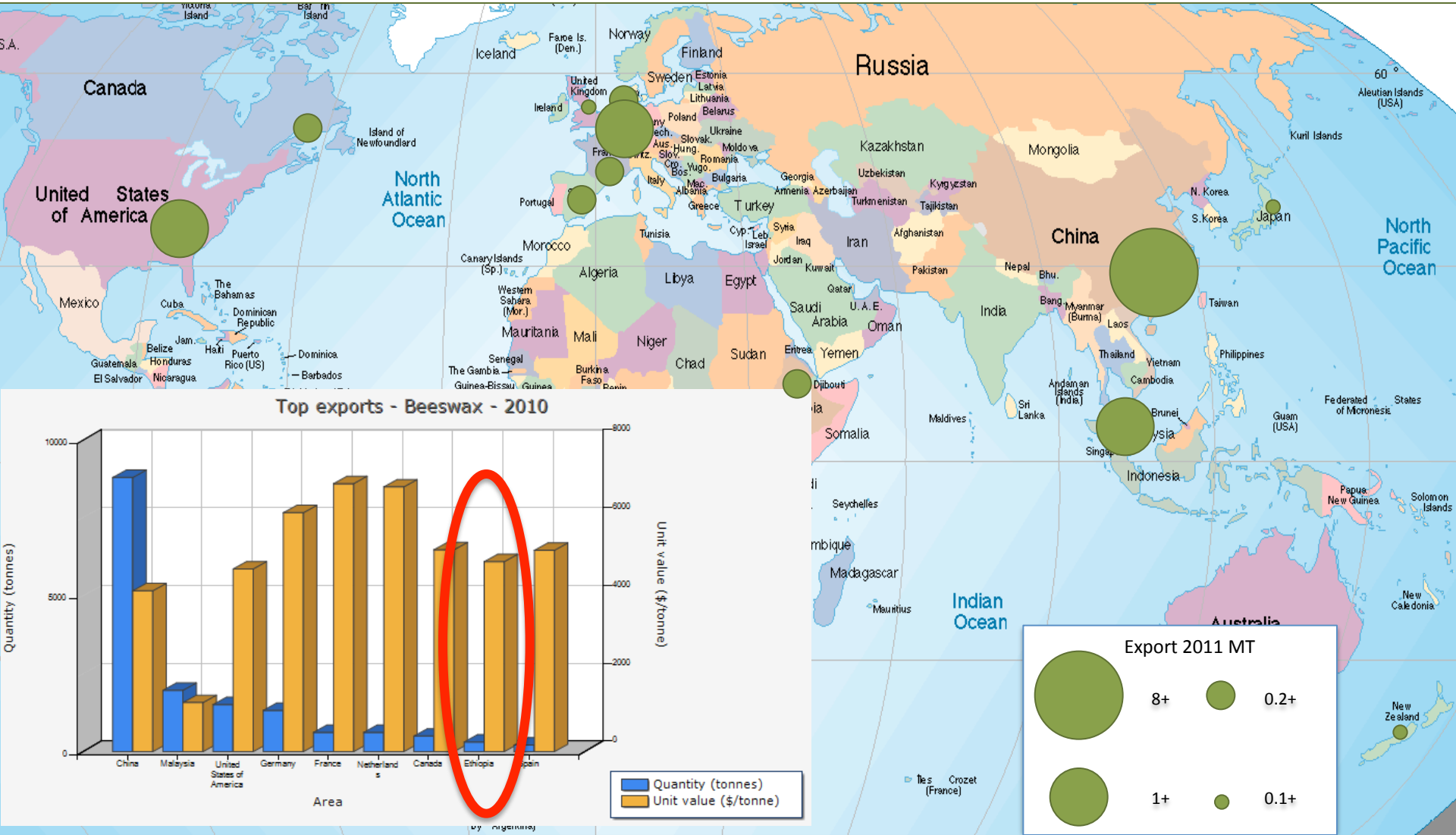
- **The main quality issues concern authenticity of origin, and contamination from residues of drugs** used to control honeybee diseases, mainly the acaricides used to control mite predators. This contamination of beeswax can be minimized by avoiding the use of synthetic chemicals in beekeeping.

- The use of chemicals in beekeeping by industrialized countries makes **beeswax harvested from the disease-free colonies of Africa** and other developing regions more **attractive**.

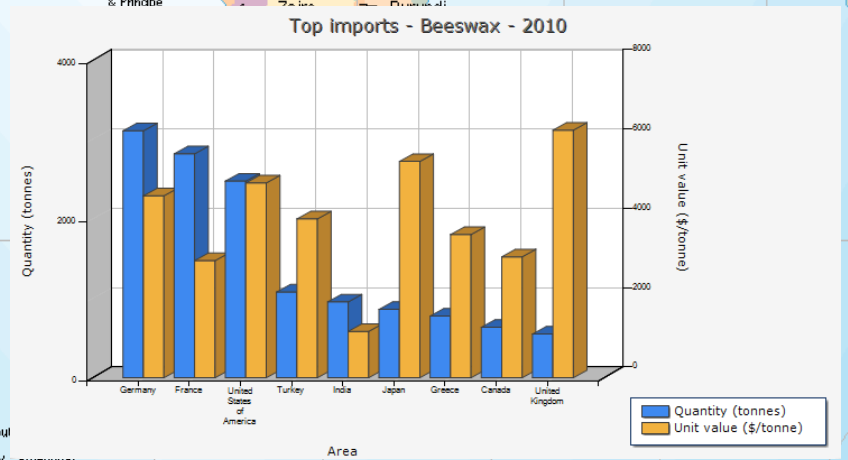
At the international level, major Beeswax producers are few, and Ethiopia is the 4th largest…

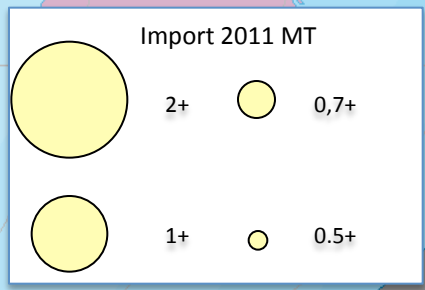


But top exporters of beeswax are not the top producers



Most of the top importers are also exporters, showing that these countries dominate the beeswax market





Overall 2012-2013 trend

- **The annual production is around 60 000 Tons per year.**
- **The EU imports around 6,000 tons of beeswax per year**, approximately 50 percent of this coming from developing countries.
- **The main importing countries are developed countries: Germany, France and USA**. These nations all have significant pharmaceutical and medical industries requiring beeswax.

- **Prices:**
  - Prices are **relatively stable**
  - Ethiopian beeswax price varied from **US$2600/T to US$3900/T in 2006** depending from the country of destination (Japan offers highest price while China imports at a lower price for lower quality)

…Ethiopia exports beeswax to developed countries (having huge pharmaceutical and medical industries) & to neighboring Sudan!

Annual Export of Beeswax

	2008	2009	2010	2011
Net Mass (Kg)	160,000	231,995	180,505	321,001.50
FOB Value (ETB)	4,593,216.11	12,607,819.57	13,677,273.31	28,497,739.85
FOB_Value (USD)	474.153.12	1,061,898.90	939,082.93	1,669,981.88

Source: ERCA (2012)

Ethiopia's Export of Beeswax in 2011

Ethiopia's Exports of Beeswax in 2011

Destination	Net_Mass(Kg)	FOB_Value(ETB)	FOB_Value(USD)
Germany	144.001,50	13.066.956,73	765.730,23
Japan	87.000,00	7.714.878,23	452.095,74
United States	70.000,00	5.952.844,27	348.839,67
United Kingdom	20.000,00	1.763.060,62	103.316,24

Source: ERCA (2012)

Looking Ahead:

- Raising & maintaining quality – commanding higher prices for organic quality beeswax produced from disease and chemical free beekeeping practice
- Value addition

Beeswax leaders : only few active exporters in Ethiopia

- Pioneer: Golla Bee Products PLC
  - Wax processing and exporting family business, in business for more than 35 years.
  - Started exporting in 2006.
  - Future: high quality (differentiated) organic beeswax and **adding value to the crude beeswax**!

9- Other Bee Products' Value Chains

Bee Venom

Propolis

Royal Jelly

Propolis

What is propolis?

consists of resins, waxes, volatile oils and pollen, and also vitamins, minerals and plant chemicals like flavonoids.

What are the uses?

- Used by the bees as a building material and keep their home dry
- Medicinal use as Natural antibiotic (properties like antibacterial, antifungal, Anti-inflammatory, antiulcer, Antioxidant…)
- As a component in Cosmetics industry (Ointments, Cream, Lotions, Toothpaste…)

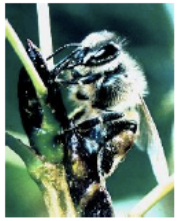
Who are the key players?

- Producers/exporters: Brazil, China
- Importers: Japan

Price and Standards?

- Price is US$53/kg
- No international standards

Main Propolis Types



Poplar
Populus*, mostly *P. nigra

In the temperate climatic zone of Asia, Europe and America

Green propolis
Baccharis dracunculifolia

Brazil

The lack of awareness and suitable techniques have been preventing Ethiopian farmers from engaging in the growing propolis business

- **The demand for propolis is increasing**. However, **harvesting and utilization of propolis is very low in many African countries**

- This is mainly due to lack of
  - awareness,
  - promotion,
  - market linkage and
  - absence of suitable techniques for harvesting propolis,

- **Since there is no regular inspection in traditional hives, the amount of propolis that can be obtained is very low**.

- **In addition, propolis is recovered by deep freezing or compressed air, two options that are not available for subsistence beekeepers**

- **Precautions**:
  - Under tropical African conditions colonies induced for propolis collection are very vulnerable to pest attacks ants, wax moth, beetles, prey-mantis through openings created. So it needs close follow up of colonies

Different products with different level of processing are possible to be produced in Ethiopia

Main manufactured Products:

Raw (Organic or not) 5kg	Dehydrated in powder (organic or not) 5kg	Concentrated in Paste (organic or not) 5Kg	Propolis extract (green propolis with cereal alcoholsor glycolic or ganicornot) 30ml
			

Consumers: Industries (food, cosmetics, pharmaceutical)

Consumers: Individuals

Brazil succeed in producing and exporting its green propolis from rosemary : The MN Propolis factory in Brazil

- **Production**
  - MN Propolis also has organic farms, where researches about apiculture, organic agriculture and production of organic apiculture products are done with international certification.
- **Quality**:
  - MN Propolis **has international certifications such as USDA, JAS and JONA** and has implemented these following programs: GMP (Good Manufacturing Procedures) , PPHO (Operational Hygiene Patterned Procedures) HACCP (Hazardous Analysis of Control and Critical Points), Tracking Control Plan

Large bee population and appropriate environmental conditions can enable export-oriented production in Ethiopia!

(Awareness, technical inputs & marketing challenges!)

SWOT ANALYSIS for Propolis Production in Ethiopia

Opportunities

- i) A growing interest for propolis use in the western countries
- ii)Ethiopia belongs a great diversity of plants for propolis production (Tropical climate)
- iii) Recent development of propolis research

Strengths

- i) Millions of colonies
- ii) Propolis production doesn't reduce honey yield in frame hives

Weaknesses

- i) No awareness of the Ethiopian propolis specificities
- ii) No markets linkages
- iii) Actual options for recovering propolis is not available for subsistence beekeepers need of(frozen / compressed air machine).

Risks

- i) Great experiences and specificity of Brezilian Propolis (green propolis)
- ii) colonies induced for propolis collection are very vulnerable to pest attacks ants
- iii) The quantities needed by the market are small and complicates the cost-efficiency of the production

As **Royal Jelly** is becoming more recognized internationally, market exceeds its original Asian origins

- **What is royal jelly?**
  - Royal jelly is a milky white liquid that feeds bee larvae.

- **What are the uses?**
  - Royal jelly is valued as a medicine, tonic or aphrodisiac by people in some parts of the world, especially in Asia
  - Recent researches show that the effects of royal jelly may be amplified when taken in combination with other bee product; such as propolis.

- **What standards?**
  - No international standard
  - Only some countries have national standards (Switzerland, Brazil, Uruguay)

- **Who are the key players?**
  - Producers/exporters:
    - Asia**: China** (60% of world production, 2000t/year), **Thailand, South Korea**
    - Europe: **Mostly eastern Europe**
  - Major Importers: **Japan**
  - Major Consumers: **China, Japan, and secondary western Europe and USA**

- **What Price?**
  - $30 for 50g → $600/kg

Potential Issue: **only storage of RJ in frozen state prevents decomposition of biologically active RJ proteins and thus RJ should be frozen as soon as it is harvested**

Collection of Royal Jelly is challenging for Ethiopia as the small farmers do not have immediate access to proper cold storage!

- Royal Jelly is collected from each individual queen cell (honeycomb) when the queen larvae are about four days old, only in queen cells is the harvest of royal jelly practical.

- **A well-managed hive during a season of 5–6 months can produce approximately 500 g of royal jelly.**

- **Since the product is perishable, producers must have immediate access to proper cold storage** (e.g., a household refrigerator or freezer) in which the royal jelly is stored until it is sold or conveyed to a collection center.

- Sometimes honey or beeswax are added to the royal jelly, which is thought to aid its preservation

Ethiopia has an high potential of production but lacks technical & marketing inputs/expertise!

SWOT ANALYSIS for Royal Jelly Production in Ethiopia

Opportunities

- i) A growing market for alternative medicine
- ii) A growing recognition of its medical benefits
- iii) iv) Big and growing use in cosmetic industry

Strengths

- i) Millions of colonies with an high potential of production
- ii) Some commercial farms have/ could easily have access to needed conservation tools

Weaknesses

- i) No direct access to refrigerant or freezing processes that are needed right after the harvest
- ii) No markets linkages

Risks

- i) Major producers and customers are located in Asia and have a strong tradition of marketing/using this product
- ii) The quantities needed by the market are small and complicates the cost-efficiency of the production
- iii) Some of the active components may be removed also if an uncontrolled purification method is used.

Interest in **Bee Venom** is growing as its medical benefit is more and more recognized

- **What is Bee venom?**
  - The venom is mostly composed of enzymes, protein, peptides, and a verity of smaller molecules .
  - No international standard
- **What are the uses?**
  - source of pharmaceutically active components. Given as a shot in rheumatoid arthritis, nerve pain (neuralgia), multiple sclerosis.
  - A Feb. 2013 study from the Washington University in St. Louis has shown the potential benefit of Melittin on the HIV medical researches
- **How is bee venom collected?**
  - electric shock method. (bee venom collector is$300)
  - No more than 10 bees killed per hive during collection .This loss is not significant to the population of the bee hive and does not effect the life span of the colony.
  - Importance of refrigerating/freezing all kind of bee venom. It also has to be kept in the dark
- **What kind of venom?**

Bee Venom	Pure Whole Dried	Whole dried bee venom	Freeze-dried bee venom
Process effort	High	low	Very high
Color	White	Yellow	White
Specificities	Purest, White, not contaminated, colorless in solution	yellow to brownish-yellow depending on the oxidation of the components	its moisture content and any other contaminants are removed in order to purify and preserve it. Can be stored for 5 years

- **Who are the key players?**
  - Producers/exporters: No precise data. Seems to be mostly collected in developed country due to the need of skills
  - Importers: One big whole sale specialist in the US : Bee venom Supply (http://beevenomsupply.com/ US Contact+1 919.807.1884)
  - Consumers: Historically, mostly Asia and Eastern Europe, national and multinational pharmaceutical manufacturers, health care enterprises, scientific institutions, university researchers, certified Apitherapists,
- **What Price?**
  - Bee venom supply $100 to $150 for 1 g

Bee venom business is skill requiring and quality oriented!

SWOT ANALYSIS for Bee venom Production in Ethiopia

Opportunities

- ii) A growing recognition of its medical benefits
- iii) A value added product
- iv) Big and growing use in cosmetic industry
- v) Recent recognition of the effect of Melittin (bee venom molecile) in the HIV medical researches

Strengths

- i) Millions of colonies with an high potential of production

Weaknesses

- i) Not much modern hive in Ethiopia
- ii) Need of specific tool for harvest (electric collector)
- iii) No markets linkages
- iv) Limited technical skills

Risks

- i) complex processing to obtain pure, good quality and long lasting bee venom
- ii) Concurrences of developed countries which have skills and strong market linkages
- iii) The quantities needed by the market are small and complicates the cost-efficiency of the production

11 – The Ethiopian Beekeeping Extension Service

Extension services in the beekeeping sub-sector

- Beekeeping extension services in the Ethiopia were started by the Ministry of Agriculture in 1978

- Its main objective is improving traditional methods of beekeeping through the adoption of better methods and techniques

- The current beekeeping extension approach has the following pillars:

  - Market-oriented beekeeping development
  - Knowledge capturing, use and sharing among beekeepers
  - Synergy of experience-based and newly-introduced beekeeping skills

Activities of the Ethiopian beekeeping extension service:

- ✓ Training of beekeepers on production and post-harvest handling
- ✓ Introducing modern (improved) production technologies
- ✓ Organize beekeepers in cooperatives
- ✓ Facilitate access to markets and inputs

Actors in the Ethiopian beekeeping extension service:

- The extension service is primarily delivered by the government – through regional agriculture offices
- But private sector actors and NGOs have been augmenting and supporting the extension system *(The OoARD, Irish project, GTZ, IPMS, WFP and WV-E played a key role in the rehabilitation of degraded landscapes which became sources of bee forage and also assisted the capacity development of farmers, private traders and extension service providers!)*

Since 1978, modern beekeeping practice was being introduced through the extension system in Ethiopia …

…yet after 34 years, adoption rate of the improved system system remains at 6%!

(94% of the beekeeping practice in Ethiopia is still traditional)!

Observed challenges in the Ethiopian beekeeping extension services;

1. Economic Challenges:

- Limited and short-cycled financial access to farmers
- Low economic incentive for extension agents to train & follow-up smallholder beekeepers

2. Technical Capacity of Extension Agents:

- Extension agents are purely trained in technical aspects of beekeeping (production)
- Market, economic, business and management aspects of bee products are uncovered in training programs of agents

3. Highly Centralized Extension System:

- Poor innovativeness (limited room for maneuver) for agents as the extension system is strongly coordinated from federal to wereda and kebele levels.

4. Dependency:

- Government and donor pushed supply of hives (not need-based)
- Free (zero cost) supply of beekeeping equipment
- Persisting expectation of both agents and farmers for donation of materials

Efforts addressing challenges of the beekeeping extension services …

- The SNV financed BOAM project brought on board the overlooked market aspect of beekeeping practices in Ethiopia
  - Out-grower schemes were introduced (market-centered value chain approach was introduced)
    (producers were linked with processors and processors with end markets)
  - At the end of the project grand increments in yield, investment, exports … were realized!

- Nonetheless, market facilitation aspects of beekeeping in Ethiopia remain to be the roles of donors (ACDI/VOCA, I2, ASPIRE).

- Up-scaling successful donor interventions by the government is essential for nation wide impact – in this case, integrating market aspects into the extension services of beekeeping is crucial!

(i.e. in addition to production & technical aspects integrating business-orientation in the system of beekeeping extension services is key for a sub-sector transformation)

- While the market-focused intervention of donor agencies continues, '***Market Development***' is identified as an essential advocacy agenda for the sub-sector!

10-Trading opportunities and challenges for Ethiopia

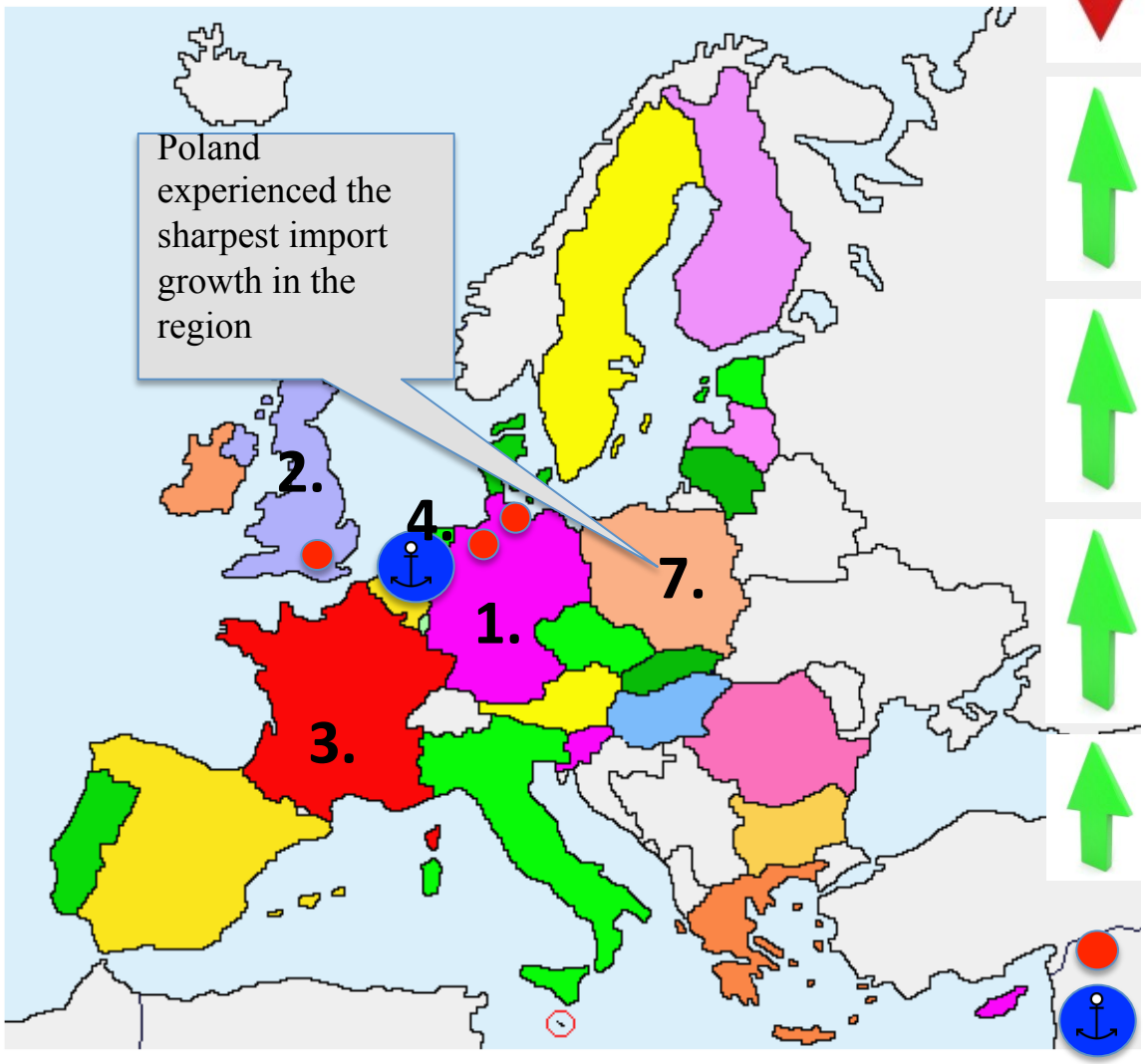
How to move from local low value added commodities to high value added (packaged/processed/branded/ diversified) Bee products (mainly honey)?

European Market for honey is large and its exports are **planned to continue to grow in the next 10 years**

- **25% of the total honey consumption, only 13% of the world production**
- As Europe has been severely hit by Colony Collapse Disorder, imports have grown (average 1.7% annually since 2005)
- Argentina is still leader of European honey imports
- Production of honey and beeswax in the EU is expected to decrease in the future, due to decreasing bee populations. EU countries will need to import higher amounts of honey from producers outside the EU to satisfy the demand, which will be stable. **This opportunity especially holds for African countries, as the bee colony collapse is also taking place in South American countries.**

Most of the European countries experience **growth in their imports**

The EU only produced 60% of the honey it consumed in 2009



Germany: Largest import market within the EU

2006	88,440 MTs
2011	77,360 MTs

UK: 2nd largest EU market

2006	29,512 MTs
2011	35,633MTs

France: 3rd largest EU market

2006	22,505 MTs
2011	27,153 MTs

Belgium: 4th largest EU import market

2006	29,512 MTs
2011	35,633MTs

Poland: 7th largest EU import market

2006	5,677 MTs
2011	13,069MTs

Major trade centers : London, Bremen, Hamburg

Antwerp: Main point of entry for Honey

Within growing EU market, Ethiopia is well positioned **to capture premium organic honey market**

- **Higher prices:** A growing market for certified organic honey and fair trade honey, which are approximately 20% more expensive.
- **Better volume:** In 2010, a total market of 6,500 tons per year (2% of the total honey market). German market is the most important (2,500 tons per year)
- **Opportunity for Ethiopia:** It is almost impossible to produce organic honey in the EU (High risk of contamination by pesticides)

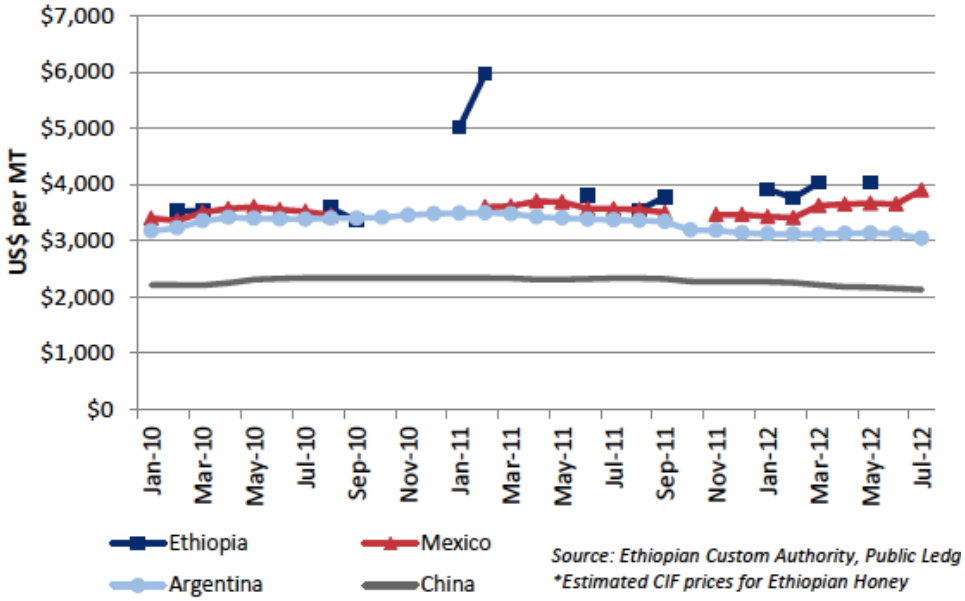
Except for high altitude honey, **Ethiopian production complies with most of the European consumer tastes**

REGION	Characteristics
Central Ethiopia	Light in color
Northern Ethiopia	Extra white
North Western Ethiopia	Yellow to red
Highland of South West and South East Ethiopia	Extra white, when mixed with other plant honey, changed to white - brown
Dominantly grow at altitude range of 1200 -2400 m	Very dark, after crystallization remain as dark brown
Dominantly grow at altitude range 1200 - 2200 m	Dark when in liquid phase and dark brown when it is crystallize

In general, EU consumers have a preference for light colored, clear liquid honey with a mild taste.

Belgium & Luxembourg	Creamed honey, not too hard
UK	About 80% of honey is blended and a large part (about 50%) consists of creamed or set honey
Denmark	Light-colored honey, but also a small demand for dark varieties
France	Monofloral honey types such as rape, clover, acacia, fir, pine, rosemary, thyme, heather
Germany	Liquid monofloral types – pine, fir, rape, clover, heather
Industrial sector	Generally lower grade, especially low water /higher HMF content

Ethiopia is currently receiving higher than average prices in the European market (likely due to small shipments and premium quality)



Source: Ethiopian Custom Authority, Public Ledg
**Estimated CIF prices for Ethiopian Honey*

Suppliers	2006		2007		2008		2009		2010		2011	
	MTs	$000s	MTs	$000s	MTs	$000s	MTs	$000s	MTs	$000s	MTs	$000s
Argentina	66,147	$100,037	53,875	$92,965	51,476	$127,934	38,665	$107,956	32,582	$97,003	28,767	$89,874
China	9,170	$10,686	9,818	$13,428	24,635	$40,497	32,623	$56,189	50,115	$83,993	57,157	$106,437
Mexico	12,424	$23,490	21,205	$40,184	22,250	$54,713	18,420	$54,885	18,226	$56,885	15,717	$53,976
Uruguay	9,551	$14,334	12,577	$20,972	8,382	$21,319	5,916	$16,229	6,998	$19,942	7,611	$22,846
Chile	6,648	$10,761	6,572	$12,233	9,158	$23,872	9,578	$29,302	9,226	$31,534	7,506	$28,249
Others	31,386	$63,633	22,985	$59,733	26,406	$86,217	32,137	$105,647	31,632	$117,338	29,984	$123,888
Total	135,325	$222,942	127,033	$239,514	142,306	$354,552	137,338	$370,207	148,779	$406,696	146,742	$425,270

*Source: Eurostat HS Code 0409.00.00, *Excludes Intra-EU trade*

Ethiopia public-private collaboration is essential for enabling on-going access to EU market

- **Reference texts:**
  - To export to the EU market, most of the requirements are included in the **Council Directive2001/110/EC**. It defines labeling, quality and level of contaminants

- **Third country listing procedure:**

  - Registration on the 'Third country listing' is needed. The list consists of countries which have a system in place for testing the quality of export honey and effectively preventing honey exports which do not conform to EU requirements. Ethiopia has been registered on the "third country listing" since 2008 (the process has to be reinitiated **every year**).

  - A Residue Monitoring Plan (RMP) is required in order to obtain EU third country listing. The RMP has to establish and certify that the honey imported by the EU does not contain any prohibited residues, such as chloramphenicol and other veterinary medicines. Tests are done in Uganda

  - In principle, the approval of the RMP is a matter between the EU authorities and authorities in the exporting third countries. **However, it is possible for producers to cooperate with their country's authorities, in order to implement the RMP.**

Ethiopia has a long way to go to meet EU packing/labeling standards

- EU regulation:
  - –EU's Council Directive 2001/110/EC and CODEX provide specific guidance related to the labeling of honey, other general laws and regulations related to the labeling and packaging of imported food products to the EU also apply to honey imports.

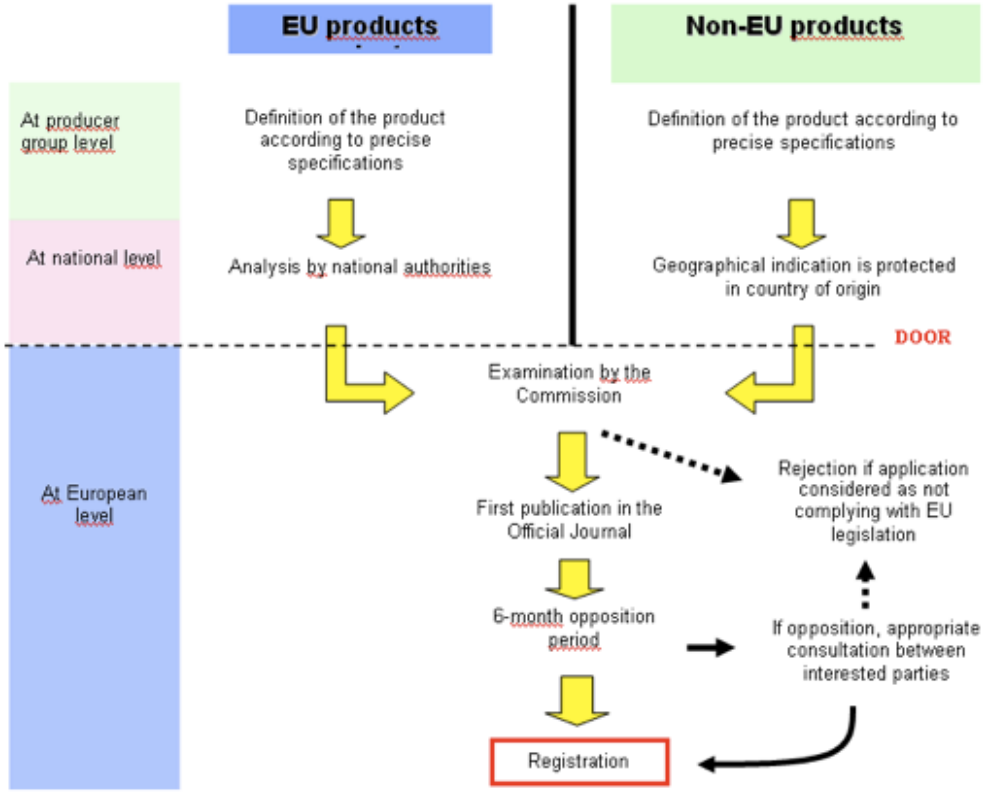
- Market demand
  - Large importers are reluctant to source bulk honey in less than full 20 foot container loads
  - At the same time, shipping glass jars from Ethiopia to the EU would be too expensive. Packaging is a problem in Ethiopia – partnering could be an appropriate strategy!

- Specific regulation
  - –Regulations specific to honey include labeling honey products according to country of harvest and degree of filtration. There do not appear to be specific regulations related to packaging, but there are strong preferences.

Ethiopia could benefit from the European market attention to the geographical indications and traditional specialties (GI)

- The process of certification

  The authenticity of the origins of food and agricultural products is of great importance to consumers, as well as local producers. In many countries, foodstuffs including honey, are identified by their location through regulatory means.



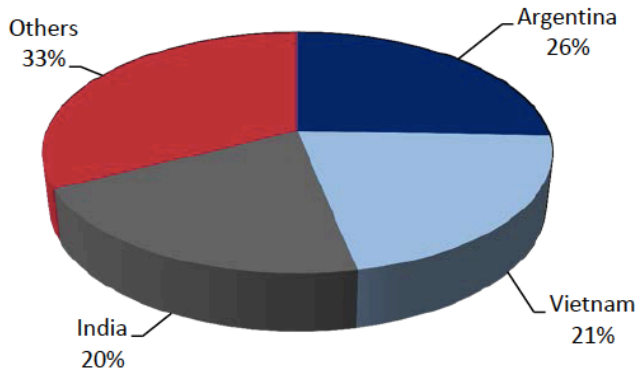
- Ethiopia could recognize its production at national level and then candidate at the European level! **Interventions in securing GI can hence open/expand markets for Ethiopian honey!**

US Market is a good market for both low cost honey and niche bee products

- A huge predominance of Argentinean and Mexican honey… most of the imports coming from developing countries (only Canada at rank 5th in 2011)

- Competitive challenge: The proximity of major mercosur honey exporters that also provide organic honey (Mexico, Brazil, Uruguay, Argentina)

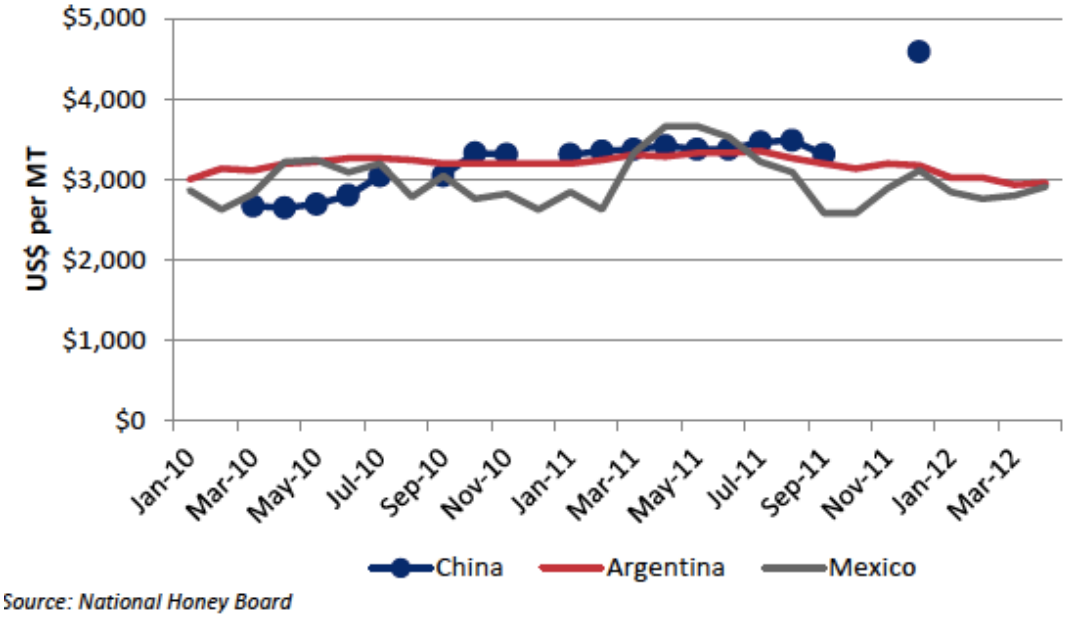
Figure 7: US Imports of Natural Honey
Market Share by Volume, 2011



Source: USDA-GATS

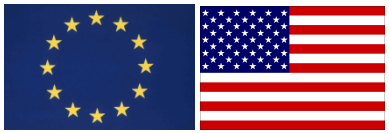
- BezaMar's experience
  - •Little and recent exports to the US market with the honey brand Tropical Forest (Organic Honey), Blue Nile (Tej) and Lalibela (Eucalyptus & Wild Forest)
  - •Still needs assistance with US imports requirements
  - •Needs Partners!

US market prices are a bit lower than European prices but some specialty honey can fetch high prices!



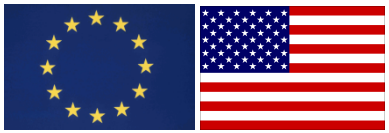
Source: National Honey Board

higher quality Chinese honey commands a price that is higher than the EU prices.



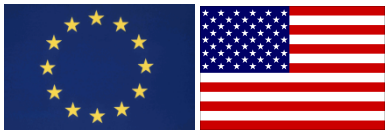
Ethiopia to US/EU Trade route is open for honey & bee products

- Ethiopia is eligible for duty free access to:
  - US & EU
  - AGOA (African Growth and Opportunity Act)
    - A US Free Trade Act enhancing market access for 40 African countries since 2000
    - Extended in 2004 until 2015
  - EBA (Everything But Arms)
    - 48 UN-designated LDCs get duty free access to the EU for all products, except arms & ammunition
    - A country is excluded when the UN removes it from the list of LDCs



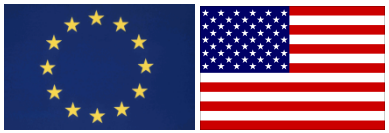
However, there are complicated Non-Tariff Barriers …

- Exporting countries are expected to certify that their food items/facilities comply with the set safety standards.



US and EU Markets require specific attention to standards and requirements

- **Factors that comprise the standards of honey**
  - Composition and quality factors
  - Authenticity in Respect of Production
  - Authenticity in Respect of Labeling and Descriptions
  - Contaminates
  - Hygiene
- **Specific measurable criteria**
  - Composition: moisture content, fructose, sucrose and glucose percentages
  - Type (blossom or honeydew): conductivity
  - Floral source: pollen analysis
- **International standards**
  - World Health Organization of the United Nations: CODEX→ The minimum international standards
  - European Union (but most of the countries within the EU have their own standards) Council directive 2001/110/EC (See details next slide)
  - United States: Similar to Codex and EU systems but also provides a mechanism to grade honey according to quality, clarity and flavor



Already much of Ethiopian honey is organic, but needs certification

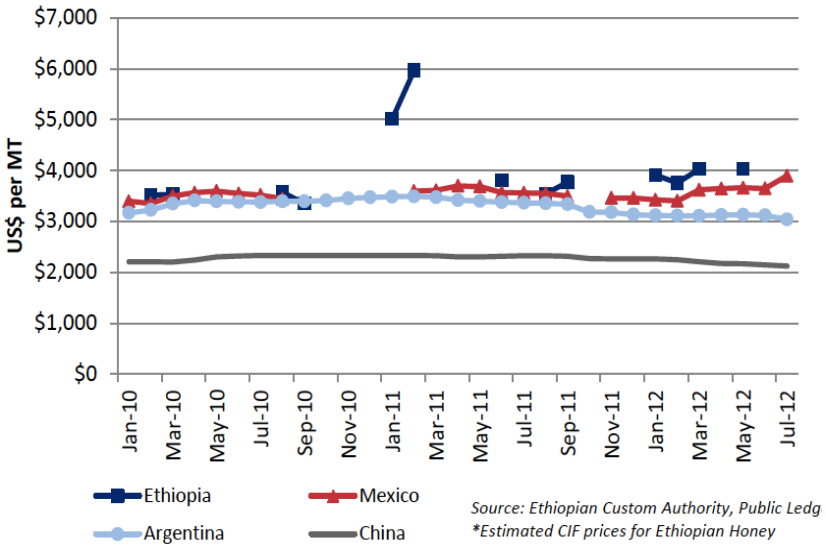
- **Several additional rules for organic honey production. For example, in the European Union:**
  - Crops on which the bees feed must not have been chemically treated;
  - Bees should be able to survive harsh times (winter) on self-produced honey and therefore not be fed sugar to increase honey production;
  - There must not be any airports or main roads near the beehives;
  - Diseases must not be treated with veterinary medicines but only with a limited number of organic substances;
  - Bees must not be stupefied during the harvest of the honey.
  - The production of organic honey in Europe is limited because of the presence of the Varroa mite, the lack of unpolluted areas, and cold winters.
  - The Varroa mite is not yet widespread across Africa, a big advantage for organic honey production in Africa.

- **Fair trade Honey** *(Beza Mar is the only fair trade certified processor and exporter in Ethiopia)*
  - Fair trade Standards for honey include:
    - Producers are small family farms organized in cooperatives (or associations) which they own and govern democratically.
    - The Fair trade price is paid directly to the producer cooperatives.
    - Environmental standards restrict the use of agrochemicals, ban genetically modified plants, and encourage sustainability.
    - Pre-harvest lines of credit are given to the cooperatives if requested, of up to 60% of the purchase price.
    - No forced or child labor.

The demand exists & the trade route is open…but Ethiopian exporters must supply the required volume meeting the quality standards…

- **Main factors:**
  - **Color →** Most important factor
  - **Quality →** Both objective and perceived quality have influence
  - **Origin →** In EU zone, Mexican honey faces low price fluctuations & has a relatively better price (second highest price)
  - **Demand in Stock**

European prices for Foreign Honey (US$ per MT) CIF*



- From 2010 to 2012 Ethiopian honey prices are on an average higher than Mexican honey
- But small volume is sold at premium price!
- Therefore, Mexico can be a strategic partner to Ethiopian exporters!

***CIF or Cost Insurance Freight**, is the price of a good delivered at the border of the importing country, including any insurance and freight charges incurred to that point, or the price of a service delivered to a resident, before the payment of any import duties or other taxes on imports or trade and transport margins within the country. (OECD)

South-South partnership can be a sound strategy for entry/ further penetration into US/EU markets!

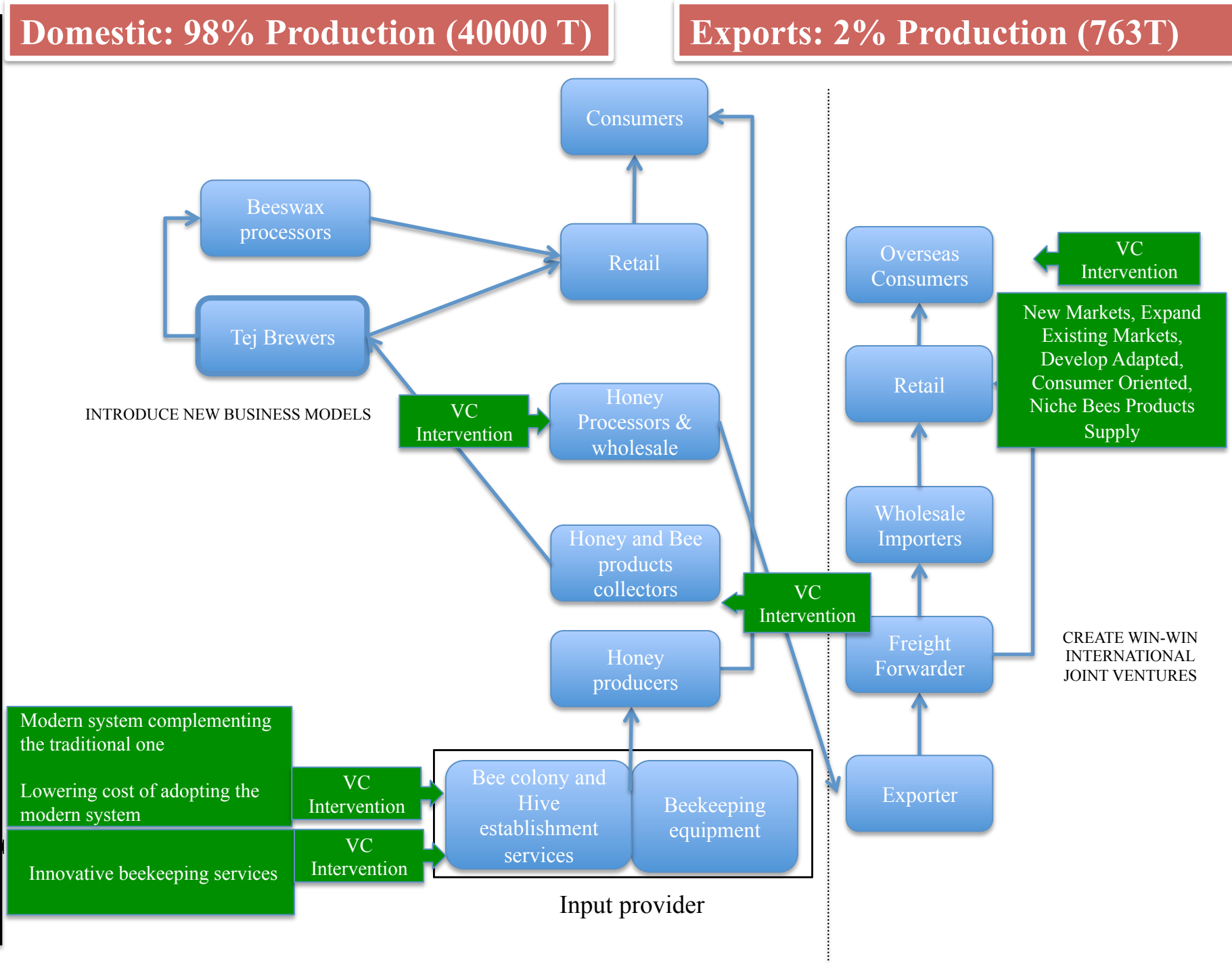
- Western countries' large importers are reluctant to source bulk honey in less than full 20 foot container loads. At the same time, shipping glass jars from Ethiopia to the US/EU would be too expensive.

- With regards to the US market, creating a joint venture with Mexican small or mid sized honey packer:

  - Helps Ethiopian producers to enter the market, solves packaging problem
  - Enables market entry using an already existing market linkages through the partner's connections
  - Provides organic labeled honey to the market

11-Way Forward: five priority Interventions

Proposed Value Chain Interventions



I^2 Interventions for strengthening the Ethiopian beekeeping industry

1. **Facilitate increased complementarity between the modern and traditional system-***(through cost reduction, quality controls, realization of scale economies and innovative business models)*

2. **Introducing new business models (***Enabling bulk supply &raising quality yield)*

3. **Access/Expand markets, (***Creating win-win international joint ventures that help local producers to comply with international standard concerning quality, labeling, shipping and trade tariffs.)*

4. **Facilitate entry into new product lines and value addition** *(develop adapted, consumer oriented, niche bee products supply)*

5. **Enforce** the existing **regulations on apiculture & Advocate** for needed changes in **policy environment** *(enable competitiveness along the value chain and advocate for market development intervention efforts by the government)*

Areas Of Action

Intervention 1 – Reducing the cost of adopting the modern system!

HOW?

WHERE to reduce cost?

Casting mould/ wax printer

Beehives

Wax melter

Storage containers

Honey Bee Colonies

Reducing the cost of using the modern system is one powerful intervention….

HOW to reduce cost?

(Identify actors and design business models for identified areas of cost reduction)

1) Tailored local production

(Input production from locally available materials- e.g. transitional beehives and accessories)

2) Quality control of local production

(Certification of accessories - efforts on the way)

3) Appropriate scale of local production operations

(Create lead businesses in the areas of cost reduction, realize economies of scale while also integrating SMEs with lead business)

Grounding intervention 1

Identify a potential lead firm

Identify a driven entrepreneur working in the identified areas of cost reduction.

Share vision and goals.

Sign expression of interest and secure commitment.

"First baby steps"

Develop business model, identify and meet with partners/important stakeholders.

Identify needs of the designed business model- develop concept note.

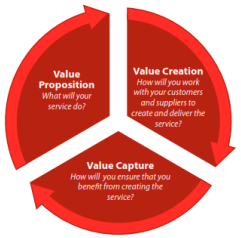
Search for sources that could address needs of the business model.

Execution

Develop detailed business plan.

Secure funding and other needs of the project.

Incubate the project through intensive business support and implementation services.



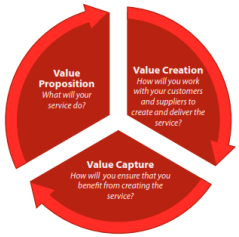
Intervention 2: Introducing new business models that can be up-scaled (Enabling bulk supply & raising yield)!

1. Encouraging and promoting the use of commercial farms for beekeeping (Engaging smallholders and landless youth in the surrounding areas)- Pilot: Tensay Zeru Crop Development Enterprise

2. Enabling coffee farms to engage in beekeeping, promoting the production of coffee honey, assisting in certification of Ethiopian coffee honey (Involving smallholders and landless youth in the area)- Pilot: Bebeka Coffee Estate SC

3. Enabling beekeeping in forests and environmentally protected areas (Involving smallholders and landless youth in the surrounding area)- Pilot: Ethiopian Gum Processing Enterprise Forest

4. Urban (peripheral) beekeeping practice (Involving mainly unemployed youth in the surrounding area)- Pilot: Meaza Mar in Addis Ababa



Grounding intervention 2

Identify businesses	"First baby steps"	Execution
-Tensay Zerfu crop development -Bebeka coffee estate -Ethiopian gum enterprise -Meaza Mar	Develop business model, identify and meet with partners/important stakeholders for the project.	Develop detailed business plan.
Share vision and goals.	Identify needs of the designed business model- develop concept note.	Secure funding and other needs of the project.
Sign expression of interest and secure commitment.	Search for sources that could address needs of the business model.	Incubate the project through intensive business support and implementation services.

Intervention 3: Facilitating access to markets and expansion of markets

(Identify actors and design business models)

- Beehive producer/supplier
- Honeybee colony suppliers
- Accessory suppliers
- Processing equipment suppliers
- Packaging material suppliers

Linking technology suppliers to production agents

Linking producers with end buyers/export markets

- Beekeepers/ Producers
- (lead processing companies, new business actors formed through new business models)

- Link producers with processors & other marketing agents
- Identify and link export market agents with processors/ producers

Export market buyers/end market outlets

Intervention 3: Through strong market integration and a good export development group, existing markets can be expanded and new markets can be more easily penetrated …(quality & bulk supply)

New markets

- Buyer agents
- ETG/ProFound
- ACDI/VOCA, I2

Processors

Unions
Cooperatives
Collection centers
Large scale producers

Smallholder producers

Ingredient suppliers
(Beehives and accessories, bee colonies, bee forage, harvesting and storage equipment, processing equipment, packaging, labeling, warehousing, transport and logistics)

- 2008, third country listing for exporting to EU secured
- 122% increment in yield registered since
- Conformity of production to consumer requests began
- Increased integration along the chain
- Increased commercialization trickled down to smallholders

Intervention 3: In the Ethiopian api-industry, there are few integrated players

Beehives & Accessories + Bee colony + Bee forage + Harvesting & storage + Processing + Package, label, warehouse & transport

North	Small scale players - Ingredient suppliers - Producers	Cooperatives	Spot /special trade	Dimma (warehouse) Comel (warehouse)	Small scale (label & packaging) Mid-large scale (transport& logistics)
North West	Small scale players - Ingredient suppliers - Producers	Zembaba Union Cooperatives	Spot /special trade	Tutu & her family (warehouse) Beza Mar (warehouse) Apinec(warehouse)	Small scale (label & packaging) Mid-large scale (transport& logistics)
South West	Small scale players - Ingredient suppliers - Producers	Spot /special trade		Yeshi Mar (site & warehouse) Rahi honey (site & warehouse)	Small scale (label & packaging) Mid-large scale (transport& logistics)
South	Small scale players - Ingredient suppliers - Producers	Keffa/Bench Maji / Shebedino Unions Cooperatives	Spot /special trade	Apinec (site & warehouse) Beza Mar (site & warehouse)	Small scale (label & packaging) Mid-large scale (transport& logistics)

Grounding intervention 3

Select/ identify businesses

-Maereg and a partner

-In South West where industry integration is poor.

-enable market access for producers/coops (organized beekeepers' group of landless youth).

-Yeshi Mar having out growers in Oromiya, Debrezeit

-Processors (Beza Mar) partnering with other Southern country agents

"First baby steps"

Identify export markets and partners/important stakeholders to secure access.

Develop concept note & identify needs of the designed business model.

Search for sources that could address needs of the project.

Execution

Develop detailed strategy plan.

Secure partners/ buyer agents.

Incubate the project through linkage/contract with buyers and business support services.

Intervention 4: New product lines, value addition & innovation

(Identify actors and design business models)

New product lines:

- Flavored honey (coffee, ginger, spice …)
- Propolis, Pollen

Value additions:

- Cosmetics/Essential oil
- Pollen-honey combination

Innovations:

- Pharmaceutical outputs (propolis pharmacy)
- Dried tej

Intervention 4: Niche bee products production opportunity for Ethiopia

- Niche Bee products such as Propolis, Bee venom, Royal Jelly could be harvested in Ethiopia
- However, they can only be produced using the modern system
- Different products require different production methods
  - For instance, bee venom collection is particularly compatible with urban beekeeping, because it requires:
    - Specific services such as costly electric tools, cool temperature, storage facilities
    - Little hives supervising for the farmer

Grounding intervention 4

Identify entrepreneurs

Identify driven entrepreneurs working in value addition, entering new product lines & engaging in innovations.

Share vision and goals.

Sign expression of interest and secure commitment.

"First baby steps"

Develop business model, identify and meet with partners/important stakeholders.

Identify needs of the designed business model- develop concept note.

Search for sources that could address needs of the business model.

Execution

Develop detailed business plan.

Secure funding and other needs of the project.

Incubate the project through intensive business support and implementation services.

Intervention 5: Advocate for needed changes in policy environment

Work through partners:

- Apiculture Board, Beekeepers Association, MSPs
- Partner projects: ASPIRE; ACDI/VOCA
- Taking part in assignments from MSPs

(Promoting competitiveness along the value chain, Advocating for 'Market Development' Initiatives by the Government)

Our goals for the future

Our goals for the future: Baseline; Year 2012/13

- Sudan - dominant
- EU - limited
- USA - trial
- Japan – expressed interest

- Average number = 150,000 nation wide
- Purchase crude honey
- Domestic and limited export
- Largely small-scale/informal businesses
- Not commercialized

Tej houses

End market (export)

Processors

Producers

- Average highest capacity = 2,400 tn/yr
- Limited sales = average highest $750,000/yr
- Lack bulk & quality yield

- Average = 1.5 mil beekeepers
- 94% traditional production
- Disorganized/scattered
- Side selling to local regional market
- Poor quality & few bulk supply

Input/Ingredient suppliers along the VC

- Importers – major 2
- Technology centers – 9 gov
- Disorganized SMEs
- Limited standardization

- Packaging
- Storage
- Beehives and accessories
- Processing equipment

Our goals for the future: target 2015